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Address.

MEDICAL EDUCATION.*

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PHILADELPHIA.

The choice of a subject to present on this occasion can not help but be a matter of considerable anxiety. When I received the invitation from my distinguished friend, your, yes, our, eminent Murphy, to speak to you, two thoughts were most prominent in my mind: First, one of pleasure at the honor bestowed upon me in being invited to journey so far to address an audience composed of many of the leaders in the American medical profession—which the majestic distances of this great country have prevented me from knowing personally as well as I know them by the luster of their names and achievements. The second thought that instantly followed was the difficulty of choosing a subject which would prove of sufficient interest and value to merit your kind invitation.

After reflection, it seemed clear to me that on an occasion like this no subject could be more suitable than that of Medical Education. A subject that will never become trite so long as the human race endures, for as one by one the great reaper, Time, mows down with his scythe the medical profession of to-day, it can leave no better legacy to posterity than the proper preparation of those who are to spring up to take its place.

There is one fact that makes this subject of the greatest difficulty. The fact that we are all medical students from the day we first enter the halls of our particular alma mater until, in the fulness of time, we must turn over our incomplete tasks to those who are to follow us. In this arises the greatest difficulty in arranging a course of study and deciding how far it should go before the student is fitted to advance from his medical school to the broader and higher school of a practitioner of medicine.

It is not in the province of this paper to discuss the theoretical question of a complete medical education. Indeed, the allotted span of life is too short for any of us to ever hope to explore the whole broad field open to us; but our aim is only to outline some of the principles, applicable to proper instruction in the first school of medicine which will enable its graduates to enter the higher school, fitted, both to advance the most rapidly and more important, with the greatest benefit to humanity, whose health and safety it is our noble mission to promote. The aim of a medical school should be to turn out men well grounded in the fundamentals of medicine, who are ready to take up any of the many branches of the profession, into which their varying talents may lead them, and, above all, make them safe, conservative physicians with confidence in their groundwork, and enthusiasm to follow this forward and fill out their knowledge in the broader school to limits bounded only by the years Providence vouchsafes them.

In the halls of my particular alma mater hangs the portrait of Gibson, one of the master minds in the history of American surgery, and one of whom the Philadelphia profession may well be proud. Under his portrait are written these words, "Principles, Principles, Principles," and it were well that these words were engraven on the minds of all teachers of medicine. For it is only by the ingrounding of the principles of medicine that the young physician can judge between the false and the true, that he is sure to meet with in after-life.

The course of study in a medical school should be well balanced and proportionate, and this aim should be kept in mind. The time given is too short to fit a man to become a specialist, but is only sufficient for a groundwork that will permit him to follow his bent, either in post-graduate schools, or in that larger and greater school of personal experience in the daily routine of practice.

Even a rapid review of the curricula of the various medical schools will show that in most this balance is not maintained. Some devote too much time to laboratory methods, some to surgery and anatomy, and in others the preference is given to internal medicine. This unevenness is usually due to the domination of one branch of the faculty over the others, and suggests the remedy of each department asking for only the necessary time for the groundwork principles of their branch, and not that necessary for the instruction of future specialists. A college course should be practical; for instance, in some schools nearly as much time is given to instruction in chemistry as is given to anatomy, and yet the graduate is hardly able to examine a specimen of urine for albumin with certainty and dispatch. In every school of medicine, as in other lines of higher education, a well-organized body of alumni should be actively engaged in shaping the destinies and policies of their alma mater. Who is better prepared to know the actual needs and medical attainments which are necessary to the well-being of the young idea in medicine, and the needs of the ailing community, than he, who of long experience at the bedside and operating table has learned the many difficulties which the physician must overcome in treating disease; aye, he must do more than treat disease, he must treat the individual. If the time demanded is too long, let each course be cut down in proportion; but the

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pruning must be most judiciously done in those branches in which all medicine centers, anatomy, physiology and pathology.

Clinical and didactic teaching each have their place. Were it possible, the ideal method would be a presentation clinically, in a logical order, of all the varieties and stages of disease, but this is manifestly impossible, and didactic teaching must always fill up the gaps left by clinical teaching, and be useful in reducing the lessons learned clinically to a systematic and remembrable classification. Thus both kinds of teaching have their place; but there is little doubt that a lesson learned at the bedside, or operating table, is more real and applicable to the student than a lesson learned from a didactic lecture.

In this regard we may speak of the value of encouraging students to attend clinics outside of their particular college hospital. No one man has a monopoly of medical skill and much valuable information may be learned by the student, both of methods of thought and technique, outside of the walls of his alma mater.

A spirit of commercialism is one of the greatest enemies of a medical school. A large production at a cheap rate may be a good enough aim for a business house, but this spirit is fatal to a medical school. Too many schools seem to take pride in their large enrolment of students, forgetting that at the same time the teachers and clinical material are entirely inadequate for the proper instruction of so large a body of men. Salaries are in many cases insufficient. It is not reasonable to suppose that a man able to make a large income in practice will be willing to give up the best part of his time to a teaching position that pays him practically nothing. The primary object in selecting medical teachers should be the fitness of the individual for the position and not his price. A man of broad general education, with a large experience in the subject which he is to impart to the student, and who is recognized as an authority, with the ability to impart this knowledge, is the type of man who should fill the professional chair; not he who is possessed of influence or affluence sufficient to warrant an acceptance of a small or totally inadequate compensation.

In the great commercial organizations of to-day it is merit and fitness which is the accepted standard for leaders. Men who have demonstrated their peculiar ability in certain lines are chosen to lead; men who, of their own worth, command and receive yearly salaries that would be handsome endowments for any medical school or college. Why is it, therefore, that the men who are teaching those who will have the health of the community in the hollow of their hands, are compelled to accept a paltry pittance in return for the ability which is, as a matter of necessity and human limitation, a work of a lifetime to acquire? Can any one of you call to mind a physician or surgeon who has, from the practice of his profession alone, accumulated a fortune to compare with those of a thousand leaders in commercial life?

The inadequacy of salaries has in it one of two dangers: Either the chair is held by a man who holds his position only at its value as a means of advertisement for his practice, and who, therefore, as his practice increases, is compelled to give less and less time to it, until too often the only benefit the student receives from his occupancy is the luster of his name. Or, the chairs are held by men who have not attained that high plane of excellence, which I feel is so essential in those who are to be leaders of men and who by virtue of their position are shaping the destinies of future generations. Either of these two alternatives is greatly to be deplored.

Nothing is of greater importance to the body politic than the proper instruction of those who are to have the care of the health of the community on their shoulders. The idea is preposterous that those to whom this instruction is intrusted should be men of mediocrity, either failures, or those whose measure of the value of the position lies in its value as an advertisement.

There is not, and never has been, a higher calling than that of a teacher, and a teacher of medicine is one of the highest in this calling. The dignity of the calling is seriously debased by its being occupied by men who, in order to obtain even a respectable livelihood, must make their high position subservient to their practice.

Many states and individuals have been liberal in their donation to this work, and surely nothing is more deserving of aid, and no charity will better repay posterity than one that assists in medical education or medical research.

This problem of education is a great and interesting one, and although it is still not entirely solved, yet in this regard we have many causes for congratulation on account of advances made and a fresh interest excited, not only among the medical profession but also among the laity.

The very occasion upon which we are gathered together, the opening of this beautiful amphitheater, shows the spirit in which education should be held. Beautiful as it is it is none too beautiful for the high purpose for which it is designed. The day of straight-backed, uncomfortable benches, foul smelling, badly ventilated amphitheaters has gone for good, and in its place has come such a room as it is our pleasure and delight to occupy this evening. A regard for health and comfort and artistic beauty coupled with a strict regard for the preserving laws of asepsis are here most faithfully carried out, independent of expense, time and trouble, and I venture to prophesy that the work that will be performed here by my illustrious colleagues will not be surpased by any in this great home of modern surgery, the United States of America.

But, allow me to return to a consideration of those principles that are the rock upon which the enduring edifice of medical education must be reared. They are three, as I have already said: anatomy, physiology and pathology. With a thorough practical working knowledge of this triumvirate all knowledge of medicine is possible of attainment.

Where is the surgeon who does not, each day of his life, call to his aid his knowledge of anatomy and pathology, or the physician who is not constantly in need of a knowledge of physiology and pathology in making the simplest diagnosis, or in performing the simplest operation of surgery.

It seems to me that there is a pressing necessity for a pathology that can not be learned in the laboratory, which for the want of a better name I will call living clinical pathology. I refer to the kind of information which is obtained by the study of pathologic processes in the living body, and particularly that which is alone seen at the operating table. I have but to remind you of the appearance of a diseased vermiform appendix immediately before it is amputated, and the markedly different appearance which it presents the instant it occupies the bottle waiting for its reception. Or, the appearance of the intestines before and after the libera-

tion of an obstruction. Those of us who are granted the privilege of this view of nature's work in diseased states, frequently occupy positions varying materially from those of our brothers who make their observations upon the shell of the individual, fortunate or unfortunate as the case may be, from whom the God-like principle, life, has departed.

What manner of a man is it who is so lost to conscience that he would dare to remove a goiter or mass of lymphatic glands from the neck; or a gallstone from the common duct; or a vermiform appendix from a confining wall; a carcinomatous uterus from the pelvis; or set a broken thigh, without an accurate knowledge of the anatomic relations of the involved area; or, in the case of the physician who would venture a diagnosis of phthisis pulmonalis; gastric carcinoma or ulcer; brain tumor, or in fact derangement of any organ of the body, unless he knew the normal function of that organ from which he could draw logical and scientific comparisons and deductions.

I say again, and with all the emphasis at my command, who is better prepared to teach these principles of medicine than the man who has acquired the knowledge by years of experience and has the ability to impart them? Teachers are born, not made; although it may transpire that many years go by before the fact dawns on the minds of the community, or that he is discovered by a small circle of friends and admirers who are possessed of sufficient acumen to recognize the inherent talent of an otherwise obscure leader.

It is this knowledge of men that marks the great educators who are thus fitted for occupancy of the highest seats in the institutions of higher education. It is not buildings or money, however necessary they may be, which mark the standard of an educational institution, but the man at the head and the corps of associated educators over whom it is his function to preside, and whose efforts towards advancement in knowledge he shall foster and guide, that make the only solid ground for reputation.

Among the pioneers of those who have done most for the advancement of medical education stands the name of one of the members of the Chicago profession. I refer to Dr. N. S. Davis, who as long ago as 1839 began a series of articles asking for improvement in our medical schools. Almost the first in the field, his conscientious and able efforts were finally crystallized into the American Medical Association.

Thus we see from its very inception the primary object of this great bond of unity between the most widely separated members of the American profession was the advancement of Medical Education. That its purpose has been productive of valuable results, there can be no question; and Dr. Davis has been able to see results worthy of the greatest congratulation in the advancement of the medical schools of the country.

Contrast this beautiful, modern, aseptic amphitheater with the dirty operating rooms of fifty years ago! Contrast this well-equipped hospital, where the poorest of patients may receive care that is in no way second to that received by the richest man in his palatial residence, with the hospitals known to our fathers! Contrast the medical course, of thirteen to sixteen weeks, of fifty years ago with out present medical course, and we certainly see the best causes for congratulation and wonder at the magnitude of the changes in only half a century!

Kingsley in "Westward Ho" drew attention to the fact that the tide of immigration was ever toward the westward, and it would seem that medicine is following in the track of the westward tendency in the United States. It was not many years ago when the East held the palm of medical education; but to-day we of the East must bow to the progress of our Western brothers, whose achievements speak so loudly and who, with no uncertain voice or faltering hand, have taken a place in the front ranks of medical attainment, and have raised the banner of Æsculapius to the virgin winds of the great West.

Original Articles.

CASE OF BROWN-SEQUARD'S PARALYSIS,

FROM STAB IN THE CERVICAL REGION, WITH COMPLETE HEMIPLEGIA, CROSSED MONOPLEGIA AND CROSSED TOTAL HEMIANESTHESIA.

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I am indebted for the full, accurate and careful history to Dr. Tiecken, lately senior of the Cook County Hospital resident staff.

The patient was admitted July 10, 1900, after having been stabbed twice in the neck by an Italian compatriot during an argument. He fell, lost consciousness and remembered nothing till his arrival at the hospital in an ambulance.

Previous history: No previous injury nor illness.

Family history is negative.

Personal history: Patient admitted a venereal sore, not followed, however, by secondaries, but denied gonorrhea, although some slight urethral discharge was noted. Smoked and drank moderately.

Examination.—Middle-aged, male, of short stature, well nourished, florid complexion and anxious expression; mind was usually clear but at times slightly delirious. Head and scalp were negative. There was no evidence of violence, no edema. Skull was negative; no evidence of fracture; no tenderness.

Neck: One inch to the right of the median line posteriorly there was a wound about three-quarters of an inch long closed by silk sutures, but not sealed; below the mastoid process on the right side another small wound was seen about one-half inch in length, apparently inflicted by a sharp pointed instrument, directed from behind forward and a little upward. Free hemorrhage occurred from both wounds. They were sealed after thorough cleansing with a cotton-collodion dressing. No other evidence of injury was found around head or neck and dry dressings were applied and the patient put to bed.

Face: No evidence of injury found. Eyes: No evidence of injury to the external eye. Pupils reacted to light and accommodation; were regular in outline, but the right was larger than the left. There was no paralysis of any ocular muscles; no ptosis or sinking of either eyeball. Ears: No evidence of injury to either the external or middle ear. No hemorrhage from either ear. Function not disturbed. Nose: No injury to external nares. No evidence of fracture nor contusion. Mouth: No evidence of injury; lips move equally; no paralysis. Tongue: Clean, movable in all directions. Readily protruded without lateral deviation; palate moved normally; fauces normal; uvula in median line; no difficulty in articulation nor deglutition. Larynx: There was no evidence of paralysis; both cords moved equally. Chest was large, well-formed and symmetrical; expansion of lungs very slight but equal in ordinary respiration; mensuration gave no difference in capacity or size; the respiration was mostly abdom-

inal in character, and irregular in rhythm. Palpation, percussion and auscultation negative. Respiratory sounds feeble and distant, although vesicular.

Abdomen: Large and slightly protuberant; inspection showed normal movement on respiration; on palpation nothing abnormal was found; liver just palpable below the costal arch; spleen not palpable; no tenderness nor rigidity found, except over the distended bladder. Cardio-vascular system: Apex beat was in the fifth interspace just below the left nipple; percussion, negative; auscultation, negative; arteries were somewhat sclerotic; veins negative. Genitalia: Slight phimosis with long prepuce. There was no external evidence of venereal disease, although patient recounted a genital sore two years ago. On passing finger along beneath urethra with gentle compression, a small amount of somewhat turbid secretion could be squeezed out, although patient denied any recent infection. No stricture was found; scrotum and testicles negative. Rectum: There were no hemorrhoids, no stricture, no prostatic enlargement.

Extremities: On admission some slight movement was noted in the right upper, and free movement was present in the right lower extremity. The left upper extremity was slightly rigid, but no motion was perceptible. Patient could not move it when asked, and said he could not move the fingers. No power was present in either of the upper extremities, and when patient was asked to squeeze the hand, he was unable to do so. The left lower extremity was completely paralyzed and rigid and no motion could be elicited by voluntary effort of patient. When tickling the sole of either foot involuntary muscular twitchings were noticed. On flexing the left lower extremity the patient complained of pain, but the limb could be rotated in every direction without great discomfort.

Articulations: There was no evidence of disease or injury to any of the joints. When pressure was applied to the spine, pain was elicited in the cervical region, especially marked in the region of the fourth and fifth spinous processes, at which site the punctured wound was located. On flexing the head on the shoulders and on rotating it from side to side, pain was also experienced.

Muscles: Myoidema fairly well marked, and when the biceps pectoralis major or triceps were struck or pinched, slight reaction was noticed, and this followed by muscular twitching (most marked in pectoral group). Muscle sense could not be elicited, as it was impossible to make patient thoroughly understand what was meant. Bones: There was no evidence of injury, no tenderness, no deformity. The Nervous System: Save for some occasional slight delirium, considerable excitement and loss of memory the psychical functions were normal, the patient answering questions intelligently. The special senses were in no wise disturbed.

Sensation: Tactile sensation was lost upon the right side, especially in the arm and leg; while upon the trunk the anesthesia did not quite reach the median line. On the face and upper neck no change was noted. Analgesia was absolute upon the right side, as was temperature perception of both heat and cold. On the side of the hemiplegia there was no particularly marked hyperesthesia, save for pain on movement of the arm and leg and extreme sensitiveness of the soles of the feet, tickling of which caused the patient to cry out. The hyperesthetic zone, which often surmounts the bilateral anesthesia, could not be demonstrated. There was no anesthesia of any variety upon the left side, save for small, totally anesthetic, irregular patches over the left shoulder both before and behind it. Regarding muscle sensibility we can make no positive statement, since the patient failed to understand the test.

Reflexes: The corneal reflexes were active. The cremasteric, abdominal and mammillary reflexes were abolished on both sides. The right knee-jerk was normal, while the left was much exaggerated. The left patellar reflex disappeared in twelve hours and did not return for two weeks. The reflexes in the left arm were certainly exaggerated.

On admission to the hospital, July 7, 1900, the temperature was 99 F., the pulse 90 and the respiration 24. Retention of urine existed with negative uranalysis. For four days constipation was absolute, when magnesium sulphate finally produced four bowel movements, after which involuntary evacuations of the urine and stools were constant for eighteen days. In three days after the left knee-jerk appeared, it was pronounced and a few days later was distinctly exaggerated. The patient was somewhat noisy and slept but little, whereupon chloral and sodium bromid were administered. Five days after admission he complained of headache and pain in the neck. The abdomen became painful and somewhat distended and the temperature rose to 102.6, and 103.4 was registered on July 16, 1900, six days after entrance. The dressings were removed and redness and edema were noticed about the larger wound. On opening it, after antiseptic precautions, a small amount of bloody fluid exuded. The parts were cleaned and a grooved director introduced without force along the wound tract, passing without resistance to a distance of 4.5 cm. when about 4 c.c. of a clear fluid gushed away. The wound was then dressed and the temperature fell to normal. Seventeen days after entrance some motion appeared in the right arm, but movement in the left arm and leg was possible only by movement of the shoulder and pelvis.

The patient's condition regarding the motor and sensory findings was as follows: In June, 1901, nearly a year after the injury, the hyperesthesia on the left side had disappeared, while the anesthesia on the right side was but little altered, tactile sensation now being fairly normal. The left-sided deep reflexes were exaggerated and the limbs more or less spastic and yet but little if any atrophy was present.

The case was clearly a Brown-Séquard paralysis, as discovered by Séquard and Turck simultaneously in 1850. According to Brown-Séquard's original proposition, on the side of the cervical section occur: 1. Paralysis of voluntary motion, muscle sensibility and vasomotor fibers. 2. Hyperesthesia of trunk and limbs, to touch, pain, heat, cold, etc. 3. Vasomotor paralysis of face and eyes (higher temperature, narrow pupils, moderate contracture of certain facial muscles). On the contra-lateral side: 4. Anesthesia for all varieties of sensation, except muscle sensibility.

I. Regarding the symptoms in detail, exact hemisection of the cervical cord produces a spinal hemiplegia on the side of the section, but, in clinical injuries as well as in experimental section, the trauma is rarely either wholly complete or strictly unilateral. In our case, the crossed paralysis of the arm is suggestive. Of speculative interest are the following possibilities, invoked in explanation of this crossed paralysis: 1. It is quite possible that the point of the knife, plunged into the left half of the cord, may have been given a downward twist at the end of the stroke so that the point injured the anterior portion of the right half of the cord. 2. The local left-sided injury probably accompanied by hemorrhage, since hematomyelia is prone to occur in the lower cervical region, could have produced indirect pressure, in which action hemorrhage may be reinforced by lymph stasis. I consider this mechanism somewhat improbable in that the crossed paresis has never disappeared, since Cushing, Kahler, Schmaus and Enderlen, describing symptoms *par distance* produced by hemorrhage, lymph stasis and swelling, conclude that more or less complete recovery is common. 3. It is likely that the hemisection was associated with secondary myelitis, the late temperature, superficial thoracic breathing, condition of the reflexes, bladder and rectal functions indicating an expansion of the original lesion by hemorrhage or inflammation. 4. The spinal hemiplegia on the side of section is explained by the general non-decussation in the spine of the motor tracts which have already crossed in the medulla. In some cases a decussation of the uncrossed pyramidal tracts may occur

in the cord lower down than the usual crossing point in the medulla, as is known through Flechsig.[9] Thus we can conceive of a spinal hemiplegia with contra-lateral monoplegia, due entirely to unilateral lesion. In this instance myelitis is, however, the better explanation. Déjerine and Thomas,[27] as well as Russel, Mallus and Sherrington, have spoken of a third pyramidal tract, the "homolateral pyramidal" tract, which may explain restitution of the motor function, and Edinger also mentions a "reserve" innervation by which decussation of motor fibers occurs lower than the pyramidal decussation in the medulla. Gowers[2] speaks of loss of power[3] on the contra-lateral side due to bilateral injury or to damage of non-decussating or redecussating fibers. The clinical type is most characteristic when the lesion is located in the mid-dorsal region, but in cervical section, or pathologic foci, paresis of the arm with paralysis of the leg is more usual, because the cervical motor tracts are, so to speak, less compact than they are in the lower cord. Hence paralysis is limited more frequently to a group of muscles than to the entire upper extremity. "Conversely, paralysis of the leg may be incomplete while the arm paralysis is complete, owing to the escape of fibers for the leg which cross lower down in the cord." (Gowers.)

The paralysis gradually decreases in some instances (Cushing's case) with surprising rapidity, and if the anterior cells are intact it gradually becomes simple weakness. The motor functions are restored more readily than the sensory, the reverse being true of the peripheral nerves. There is an inactivity atrophy of the muscles without abolition of faradic irritability and without reaction of degeneration. The paralysis may be spastic instead of flaccid (Vix,[15] Mann[24]). A facial paralysis was noted in a questionable case reported by Lanzoni. Respiration is rarely affected, imperfect movement of the chest never having occurred according to v. Leyden and Goldscheider,[1] although in one instance paralysis of half of the diaphragm occurred, and in three cases the abdominal muscles were paretic. Involvement of the thoracic and abdominal muscles is usually indicative of a bilateral lesion. Swelling and edema in the paralyzed members have been observed by Glaezer,[38] and swelling with pain in all the joints on the paralyzed side was observed before death by Allesandrini, masses of coagulated blood being found in the joints at autopsy. Viguès, Joffroy and Soloman[11] have observed synovitis in the knee-joint on the paralyzed side and acute decubitus, referable to anterior root section.

II. *The Deep reflexes* are absent according to Glaezer,[38] while Erb,[11] Schultz,[40] Revillout[41] found them exaggerated on the side of lesion. Inhibition of the reflexes occurs not only from the brain but also, according to Sternberg from the cord itself. Bastian,[46] in four cases of total transverse lesion of the lower cervical and upper dorsal cord, observed abolition of the tendon reflexes, where shock was eliminated. Bruns[29] examined anatomically a similar case where the lumbar spine was intact. As yet we have no wholly satisfactory explanation for such cases. Bastian and Jackson suggest that the lumbar centers are independent of the cerebellum. Von Leyden and Goldscheider[1] propose inhibition from lasting irritation. Bowlby found no tendon reflexes in eleven cases of complete destruction of the cord, while in three incomplete traumata they were increased. Gerhardt suggests that the brusqueness of the trauma may have some bearing, since the reflexes were preserved in his case of gradual total destruction of the cord by compression. Cushing[45] in a case of spinal gunshot wound and hematomyelia describes disappearance of the deep reflexes on the side of injury after four days and gradual reappearance as the paralysis decreased. Cushing remarks upon the dearth of references upon this sequence of reflex activity (ref. 46 to 50 inclusive) and quotes Kocher's case in which the weakened reflexes disappeared on the seventh day to return on the eleventh and were greatly exaggerated on the fourteenth. In our case the patellar reflex on the side of injury was first exaggerated, then, after twelve hours, disappeared for 14 days to finally return and remain exaggerated. In Cushing's case, the lesion was not strictly unilateral, there being more than the usual anesthetic zone on the side of paralysis, a temporary paralysis of the opposite arm, involvement of the bladder and rectum, bilateral intercostal and abdominal paralysis, etc. The skin reflexes are abolished or decreased on the side of paralysis and on the opposite anesthetic side they have been variously described as normal, weak, absent or increased.

III. Hyperesthesia, observed by Fodera in 1823 and Schoeps in 1827, occurs on the paralyzed side and also as a zone above the anesthetic areas near the level of the lesion. If the lesion be cervical both the anesthetic and hyperesthetic areas above are not zonular but irregular in contour. The same is observed in lumbar lesions. Hyperesthesia has been referred to the wound itself or to paralysis of inhibition. Irritation is not causal of anesthesia and hyperesthesia, according to Gowers, since both have endured twenty years or more. Gowers suggests that they "are due to an altered action of the cerebral centers on the opposite side of the brain." Hyperesthesia concerns tactile pain, heat and cold sensations and its absence infers incomplete section (Kocher). Kocher[13] observed such over-sensitiveness that mere movement caused the greatest pain. Hyperesthesia may, according to the same observer, develop later from secondary myelitis. Hyperesthesia was not found by Ferrier, Marshall and Bottazzi in experimental hemisection. It usually disappears rapidly, though its occasional protracted duration has been noted (v. s.). According to the investigation of Woroschiloff, W. Koch, and Martin, the fibers whose section results in hemianesthesia, lie in the lateral tract near the cerebellar and pyramidal tracts.

IV. The zonular anesthesia on the side of injury and motor paralysis is susceptible of ready explanation since the lesion involves not only sensory fibers which, we may say, are about to decussate to the other side and produce the crossed hemianesthesia, but also implicates sensory fibers from the contralateral side which may be said to have just decussated to the side of section.

V. *Muscle Sensation:* Abolition of muscle sense on the side of lesion is fully in accord with the conceptions of Erb, Bernhardt, Brown-Séquard, Fieber, Lanzoni and Allessandrini regarding the uncrossed course of muscle sense fibers. In Vix's case, with the preservation of locality sense, there was loss of pressure sense. Ataxia, observed by Bottazzi, Herhold[23] and Kocher, may be explained by abolition of the muscle sense (Leyden). Bottazzi[19] and Marshall[18] decided that the muscle sense was abolished in animals on the side of section, while Turner[17] and Ferrier[20] observed its loss on the side opposite to the lesion. The muscle sense fibers, and probably also those of pressure sense, run in the cord without decussation and most likely in the posterior tracts, i. e., in Burdach's column tending to enter

Göll's column higher up in the cord (Edinger, von Leyden and Goldscheider, Mott and Kocher). The column of Clarke, Gower's fasciculus and the lateral cerebellar tract are also suggested as likely paths for the muscle sense. Brown-Séquard's assertion that muscle sense is preserved on the side opposite to the lesion has been corroborated by Sachs, Freud, etc.

VI. *Vasomotor paralysis* on the intact side has been noted by Erb and Allessandrini, but the vasomotor symptoms usually lie on the side of section. The vasomotor fibers course in the antero-lateral columns, enter the anterior gray matter and leave by the anterior roots. Of vasomotor symptoms only relative narrowing of the left pupil was observed in our case.

VII. *Contralateral Hemianesthesia:* Brown-Séquard's doctrine regarding sensory spinal decussation was widely opposed and he finally abandoned his original conception and explained contra-lateral hemianesthesia as an irritative inhibition on the sensory paths, advancing as proof the following facts: 1, that section of the posterior roots of the upper dorsal region produce hyperesthesia of the limb on the same and anesthesia on the opposite side; 2, that a contra-lateral anesthesia produced by cervical hemisection can be converted into hyperesthesia by a second dorsal hemisection, while the hyperesthesia on the same side becomes anesthesia; and 3, that the anesthesia disappears when the corresponding sciatic nerve is moderately stretched. Brown-Séquard held to the clinical type of hemisection despite his altered conception of its etiology. Many physiologists maintain that the sensory fibers do not decussate within the cord; nevertheless clinical evidence in favor of decussation is very convincing. According to Gowers, "unilateral lesions of the cord cause loss of sensibility in all its forms on the side opposite to the lesion, proving beyond all doubt the decussation in the cord of the nerves of pain, touch and temperature. The paths of pain and touch sensation do not seem to be near together. Sensibility to pain has been lost in almost all the recorded cases, but that to touch is only two-thirds. The facts suggest secondly that the two paths for tactile sensibility are nearer together than are the two paths for common sensibility." "In no case of chiefly unilateral lesion has sensibility to pain been lost on both sides, whereas in two recorded cases sensibility to pain was lost on the side opposite to the lesion while that to touch was lost on both sides. Both these conclusions harmonize with the suggestion of experiment, that painful sensations are conducted in the antero-lateral column, those of touch in the posterior column."[2 3]

"Sensation is affected on the opposite side, but not quite up to the level of the lesion, because the decussation of the sensory tract is not immediate, but occurs somewhat above the entrance of the nerve."

"The upper level may vary for different forms of sensibility, in consequence probably of the level of crossing (in relation to entrance) being different for the several paths."

"A lesion in one side of the lumbar enlargement often affects sensation on the same side as motion, because it damages the sensory path before it has crossed. Experiments with animals often give uncertain results."

"Sensibility to pain is almost invariably impaired. The temperature sense is usually affected with that for pain. In only 2 of 20 carefully recorded cases was the sense of temperature normal and that of pain impaired, and in neither of these cases was the sensibility to pain actually lost. On the other hand, in one-third of the cases, tactile sensibility was unaffected, and in about one-tenth it was impaired on both sides."

In Turner's[17] analysis, pressure (tactile) sensation was preserved on the paralyzed side in all the cases, though Mott refers to reduction of the same in certain cases, and in the majority of cases hyperesthesia (hyperalgesia) was found on the paralyzed side, and on the opposite side anesthesia for all qualities of sensation existed. Partial anesthesia has also been described, e. g., normal tactile sensation with incomplete analgesia, reduction in tactile sensitiveness with analgesia and thermo-anesthesia or reduction in pressure or pain perception with thermo-anesthesia (v. Leyden and Goldscheider[1]). Fieber observed three times that heat sensation remained normal while electro-sensibility was lost. Regarding the opopsite-sided anesthesia, Kocher describes it as complete or incomplete, as simple reduction in pain perception, usually with thermo-anesthesia. The anesthesia gradually regresses, and pain sensation may return before tactile sensation, which latter may anticipate the return of temperature sensation. Heat perception may return before cold is recognized (Kocher and Rosenthal[25]). Crossed anesthesia was absent in the experimental observations of Schiff, Mott, Bottazzi and Marshall, who found sensation reduced on the side of injury. The original statement that crossed hemianesthesia is complete has no universal application. Müller[4] observed in a case of solitary tubercle of the cord no complete crossed hemianesthesia but a selective hemianesthesia, hemianalgesia and hemithermoanesthesia. Mann[24] reviewed the literature of 102 cases of spinal hemiplegia with a view of ascertaining whether partial crossed anesthesia occurred in spinal mono- or hemi-plegia, with the result earlier observed by Gowers and Oppenheim that, after rejecting 50 imperfectly reported cases, 31 cases presented complete anesthesia, while 21 cases exhibited the syringomyelic sensory dissociation, i. e., analgesia and thermo-anesthesia. He found no instance in which pain sensation was preserved, while the tactile sensation was disturbed. According to Mann's conception, there are probably not wholly distinct paths for each species of sensation and tactile sensation is possibly the fundamental or coarser element in all kinds of sensation, and hence it may persist when the finer sensations, differing from tactile less in quality than degree, have disappeared. Grasset,[28] in speaking of *dissociation syringomyélique des sensibilités,* asserts: 1, that syringomyelia may exist without sensory dissociation, and 2, that dissociation occurs in other diseases, e. g., neuritis and myelitis (Gombault, Lantereaux and Reboul), hysteria (Charcot), sciatica (Ziehl), lepra (Leloir, Jacoby, Babinski, Thibierge), tabes (Parmentier), hematomyelia (Minor), sclerosis multiplex (Freund), spinal syphilis (Brissaud, Hanot, Déjerine, Thomas, Prat, Cestan, Meunier), intramedullary tumor (Gendrin), or meningeal tumors (Charcot, Gindrac, Oré), multiple tumors (Bruns,[29] Schlesinger), with the Brown-Séquard syndrome (Max Laehr, Müller, Charcot, Gombault, Gowers, Beevor, Steele and Williamson), spinal compression (Van Gehuchten), complete transverse spinal lesion (Minor[30]), Edsall in Pott's disease, trauma of cord (James H. Lloyd), spinal concussion (Reynes[51]), etc.

Brissaud[35 6] and Raymond[56] speak of incomplete dissociated anesthesia. From the foregoing citations the inference is drawn that conduction of temperature sensation is closely associated with that of pain percep-

tion. In the contra-lateral dissociated (syringomyelic) hemianesthesia, Kocher considers that the tactile sensation tracts do not course with the other sensory fibers nor with the pyramidal motor fibers.

Non-decussating sensory fibers may be found in: 1, the posterior columns; 2, in Clarke's columns, and from its cells to the cerebellar and Gowers' fasciculi, and 3, in the "Grenzgebiet" (Endinger), the posterior mesial portion of the lateral tract. This last-named tract is concerned with tactile sensation (though perhaps not with the finer sense of locality), as demonstrated by the experiments of Koch, Woroschiloff, and Martinotti in which hyperesthesia follows their section. The question is as yet undecided whether finer touch sensations as localized pressure sense are conducted in the posterior column near the tracts of muscle sense. An isolated conduction of simple tactile sensation in the posterior columns seems improbable to Kocher and is likely confined to the lateral column. Kocher concludes that tactile and pain sensations are conducted in the lateral column, but in no unilateral manner, and that many of the fibers of the posterior root sooner or later cross through the anterior commissure to the other side of the cord, conducting the bulk of the sensory fibers and certainly those of pain and temperature sense. Analgesia, often observed as the single contra-lateral sensory variation in (partial) hemisection, has been produced in animals by Holzinger[26] by section of the lateral tracts and by section of the posterior half of the cord to a point a little anterior to the pyramidal tract. The later experiments of Brown-Séquard (q. v.) must perhaps be explained by a double collateral crossing of the sensory fibers.

Priapism, vesical and rectal disturbance may be wholly absent or occur transitorily, possibly as evidence (Kocher, Cushing), of some injury to both sides of the cord. Delirium does not explain the bladder and rectal disturbance in our case since they outlived the delirium.

Radiate pains, observed by Vix, Berndt and Albanese, and spastic paralysis seem to Kocher to indicate an incomplete lesion, favoring the production of irritative symptoms. In one instance spasticity and partial loss of power occurred on one side with formication and anesthesia on the opposite side. In another instance, contractions occurred as paralysis decreased while radiating pains followed the hyperesthesia.

Prognosis.—In clinical and experimental cases, almost complete restitution to normal is possible (Vix,[15] Kocher[13]), and it is not due to re-establishment of conduction in the severed tracts, since ascending and descending degeneration occurs, nor to simple cord contusion (Schrader[16]), but rather to assumption of the functions of the divided fibers by the uninjured side of the cord (Kocher). The immediate prognosis of hematomyelia is usually good (Cushing) while J. K. Mitchell warns against an absolutely favorable late prognosis, since tardy sclerotic changes may result even when immediate recovery seems perfect. The prognosis of Brown-Séquard's paralysis necessarily varies according to the etiology of the syndrome, e. g., syphilis, tumors, sclerosis, myelitis, tuberculosis or trauma, hematomyelia, fracture, luxation, etc.

GENERAL CONCLUSIONS.

1. The lack of correspondence between hemispinal section in certain lower animals and in man is probably due to different anatomico-physiologic conditions.

2. The Brown-Séquard clinical syndrome undoubtedly exists, although less an entity than a symptom and exists despite some physiologic evidence to the contrary.

3. Variations from the original type occur from the character of the numerous etiologic factors and from the frequency with which experimental and clinical lesions affect more or less than one exact half of the cord.

PARTICULAR OBSERVATIONS.

4. No primary elevation of temperature from cervical injury was observed, the secondary elevation being probably due to subsequent myelitis.

5. Few vasomotor symptoms were observed.

6. The Brown-Séquard paralysis was typical in the sense of the original description since the contra-lateral anesthesia was not dissociated but total, i. e., "for all varieties of sensation."

7. It was atypical in the bilateral lesion, the crossed and persistent monoplegia, the shallow respiration and bladder and rectal disturbance.

8. The failure of the right side to assume the functions of the severed right half of the cord seems to indicate a bilateral lesion.

9. Again, notwithstanding the bilateral involvement, the homolateral anesthesia was slight, arguing for involvement of the left side chiefly.

10. According to Kocher, spasticity speaks for incomplete lesion favoring irritation, yet the persistence and fulness of the symptoms in this case speak against partial lesion.

11. The zone (or plaque, in case of cervical section) of surmounting hyperesthesia was lacking, possibly explained by the mental state (?).

12. The condition of the deep reflexes on the side of lesion is somewhat unique in this case. The left knee-jerk was first exaggerated, then in twelve hours disappeared, was absent for fourteen days, and in three days after reappearance became much exaggerated, whereas the arm reflexes from first to last were exaggerated.

13. An interesting, though perhaps wholly accidental, connection existed between the absence of the knee-jerk and the presence of involuntary evacuations, which ceased about the time the patellar reflex returned.

14. The evacuation by the grooved director of what was probably cerebrospinal fluid is interesting and especially the direct subsidence of the fever, delirium, etc. Unfortunately, a bacteriologic examination was prevented by the sudden gushing out of the fluid in this species of spinal puncture.

15. While the clarity of the fluid did not speak against intramedullary hemorrhage (hemato-myelia), still the fever, the persistence of the symptoms and possibly the evacuations of the fluid seem to me to indicate an acute secondary (meningeo) myelitis.

16. The prognostic lesson from our case is obvious. While at first the outlook was no worse than, e. g., in Cushing's case of probable hemato-myelia, and while general observation warrants a relatively favorable prospect, yet recapitulation of the clinical course, the delirium, pain in the head and neck with the fever probably indicated the late myelitis with its usual prognostic inferences.

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DERMATOMYCOSES IN THEIR RELATION TO ALLEN'S IODIN TEST.

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Parasitic diseases of the skin may be classified into: 1, those in which the definite etiologic factor has been isolated and identified (microsporon furfur of tinea versicolor, the trichophyton of tinea tonsurans and circinata, and the achorion Schoenleinii of favus), and 2, those in which *no absolute* proof has been given of the constant presence of vegetable micro-organisms, and yet which in appearance, clinical course, reaction to antiparasiticides, and other circumstances, seem to be of parasitic nature (pityriasis rosea, eczema marginatum, mycotic eczema, etc.).

In this paper it is my purpose to deal only with the following conditions: pityriasis versicolor, pityriasis rosea, tinea circinata (localized and disseminated), eczema marginatum and mycotic eczema, and endeavor to show that while in most cases these admit of ready diagnosis there are times when differentiation from other important conditions must be made. No one test in my experience for the determination of the parasitic nature of these affections, apart from the actual demonstration of the fungus, has served me so well as the one which forms the subject of this paper.

Pityriasis versicolor, or chromophytosis, is a condition which, as a rule, is within the diagnostic abilities of all and yet there are some points about it that are often overlooked. Almost without exception text-books state that this disease affects the covered parts of the body and leaves the parts exposed to light—face, neck, and more particularly the palms—perfectly free. This statement is certainly not true, as I have had ample opportunity of convincing myself, more especially since the iodin test was brought to my notice by Dr. Charles W. Allen, of New York City.

This test consists in applying to the diseased areas, or to suspected ones, a solution of iodin, preferably Lugol's solution (iodi, 5; potass. iodidi, 10; aquæ, 100). In the diseased regions an intense dark-brown or deep mahogany discoloration takes place at once, which shows itself in marked contrast to the surrounding healthy tissue, which latter stains a very light-yellowish color. If the lesions are small and punctate, as they are at the onset of the disease, the discoloration will appear as such; if diffuse and confluent there will be a large darkened patch. The intensity of the reaction, i. e., the depth of its color, will depend upon the stage and severity of the disease; at the very outset, or in the retrogressive stage when the infection is slight, the stain will appear lighter than in the more active stages of the disease, though far more intense than in the normal skin.

It is thus seen that not only is the test of value for the recognition of small, faint and suspected areas of disease, but that it also gives us information as to its course.

With the aid of this test I have time and again been able to demonstrate the existence of lesions on the neck, at the angle of the jaw, on the chin, on the forehead, and on the side of the face up to the roots of the hair. In some instances the lesions were so faint as to be hardly perceptible to the naked eye, and yet an application of Lugol's solution brought them into relief.

In applying the test it is well to make a cotton swab tightly twisted on the end of a tooth-pick, applicator, or match, and then to rub in the Lugol's solution over any given area; in this way the contrast between the darkened patches and the healthy skin is more clearly brought out.

In subjects with hypertrichosis of the chest and abdomen, lesions of tinea versicolor, perhaps more so than in any other affection, are easily overlooked; under such circumstances Lugol's solution is of great service in making distinctly visible many otherwise imperceptible lesions. Some patients present themselves just after a bath with a pale-pink eruption which proves very puzzling. The application of Lugol's solution not only stains these areas but corroborates the diagnosis of tinea versicolor by the general configuration of the patches.

Gottheil has reported a unique case of palmar chromophytosis, thus disproving the former ideas as to the noninvolvement of this part. Only recently[1] the same author has published a most exceptional case of pityriasis versicolor of the face alone in a young colored man.

It is commonly known that recurrences, if I might use that term, are quite frequent in this affection, being caused by the failure to eradicate the disease in its entirety. Yet, there are instances in which, so far as the human eye can determine, the disease has been eradicated, or controlled, and still relapses occur. How are we to explain these cases?

1. Recurrences are due to the overlooking, and consequent non-treatment, of a region which Dr. Allen has repeatedly shown to be one of the main causes of re-infection, namely, the suprapubic region. In men, as well as in women, small faint patches of the disease are

1. Medical Record, April 27, 1901.

hidden in this region and are never treated because never suspected. In these cases the application of Lugol's solution renders the diagnosis doubly sure; for pale and hidden lesions at once become visible and lead the way to a proper eradication of the disease. As long as any vestige of the disease remains, so long will recurrences take place. Lesions in the suprapubic region appear at times to itch more than in other parts; this gives rise to scratching, and the subsequent conveyance to other regions, and to auto-inoculation. I do not say that the suprapubic region is affected in every case, but the number is sufficiently large to warrant attention. With Dr. Allen, and in my own experience, I have seen instances in which a history of numerous outbreaks was given, and where thorough treatment of the aforesaid region brought the disease to a standstill.

2. Recurrences are due to lack of proper treatment. It is the custom of most physicians to look very lightly upon the treatment of this condition, to give merely exfoliating medicaments of green soap, hyposulphite of soda, sulphur, etc., and to rely upon these, with an occasional bath, to control and cure the affection. This, however, is insufficient. In studying the development of the disease it will be seen that the incipient patches have their origin about the hair follicles and, in some cases, appear to extend into them. The origin of the patches being "perifollicular, or perhaps intrafollicular," penetrating agents, such as B-naphthol, resorcin, chrysarobin, etc., must be combined with desquamating ones in order to obtain the best and most permanent results.

3. A third and most important cause of recurrences is the improper care of the underwear during and after the course of the disease. So abundant are the spores in any given scraping that it is safe to assume that many of them cling to the underclothing, which, if not changed frequently and not properly and thoroughly boiled upon removal, will again inoculate the skin. If possible the underclothing should be changed daily during the course of treatment and re-used only after appropriate disinfection.

With this disease few conditions can be confounded; only three are worthy of note—chloasma and lentigo, syphilis, and dirt. It seems strange that dirt should be considered, and yet I have seen mistakes made both ways, as it were. I remember very well a case of pityriasis nigra shown by Dr. Allen before the New York Dermatological Society, in which "at first glance almost all the gentlemen present were disinclined to attribute to the disease any great share in producing the appearances." In fact, when seen at the dispensary, I myself first thought of a dirty neck. After the thorough use of soap and water the condition remained unchanged until "vigorous treatment with chrysarobin" freed him from the affection. Not only was the case unusual on account of its dark color, but there were patches of the disease extending on the right side of the face to the malar bone and on the left side to the roots of the hair. There were also several spots in the suprapubic region.

On the other hand, I have seen areas of dirt distributed on the neck, strongly suggestive of tinea versicolor; these responded very kindly to soap and water, but not to the iodin test.

Chloasma and lentigo are of course in and not on the skin; that is, they are pigmentations of the mucous and not the horny layer; they are not scaly and do not respond to the test. The fact that chloasma is more common on the face is not of positive value, since it has been shown that patches of chromophytosis are occasionally found in that locality.

Some writers have stated that syphilitic macules may be confounded with the disease. Not only is their color different, but they are not scaly nor elevated, nor do they respond to Lugol's solution. The presence of the microsporon furfur under the microscope is proof positive and easy of demonstration. In spite of all this I have known the conditions to be confounded.

In a number of instances I have observed tinea versicolor and a macular syphilid in the same patient. In these cases it is interesting to see how Lugol's solution selects, as it were, the parasitic areas and leaves the syphilitic ones faintly tinged at best.

As in a previous paper[2] on a similar subject, I would conclude:

1. The old theory that only hidden parts are affected is no longer tenable.

2. Allen's iodin test is of marked value, not only for classroom demonstration and for bringing into relief pale and hidden lesions, but also for differentiating parasitic, or seemingly parasitic, skin affections from those of a non-parasitic nature.

3. Recurrences are in the main due to the overlooking and non-treatment of the suprapubic region and to the use of desquamating agents to the exclusion of penetrating ones. Both must be combined if a cure is desired.

I have dealt somewhat at length with this condition, because it is a type of disease which best demonstrates the application of the test.

At this point I might say that in none of the conditions generally accepted as non-parasitic has the test been proved positive. Thus, I have applied it to seborrheal eczema, scaly syphilids, simple eczema, dermatitis, the desquamations of scarlet fever, measles, and other conditions of a desquamative nature; while the cast-off epithelium in these cases will take up the Lugol solution faintly, a little more I might say than perfectly normal skin or an erythematous patch, there is no deep mahogany or dark brown discoloration; that is, there is no positive reaction.

There have been a few rare cases of non-parasitic nature in which the application of Lugol's solution was followed by a suspiciously-looking mahogany discoloration. Within a few minutes, however, this wore off, thus differentiating it from the stain of parasitic diseases, which remains for a very much longer period of time.

Pityriasis rosea, or pityriasis maculata et circinata, is a condition which occurs more frequently than is generally supposed; it is usually either entirely overlooked or else diagnosticated as something else. Contrary to the opinion of Crocker and Stephen Mackenzie, it is in my experience far more frequent in adults than in children, and this despite the fact that the material at my disposal embraces a very large number of the latter. It does occur in children, however, and within the past three years I have seen in all perhaps a dozen cases under 10 years of age; lately I observed an instance in a child of fourteen months.

It has been, and still is, a mooted question as to the exact etiology of the disease. The Vienna school is outspoken in its belief that it is parasitic in its nature; in fact, that it is but a form of disseminated ringworm, and hence the term *herpes tonsurans maculosus et squamosus*. They claim that many are not convinced of its mycotic nature on account of the great difficulty in finding the spores during the first few days of the dis-

2. Philadelphia Medical Journal, June 1, 1901.

ease. Basin considers it arthritic and Vidal claims to have found a *microsporon anomoeon*. I have heard Lassar state that the disease was due to a fungus generally found in new underclothing that had not been washed before wearing.

For my own part, I must confess that my search for mycelia and spores in this condition has not been productive of any results, and yet I have no hesitancy in stating my personal belief that the disease is parasitic, so markedly does it take up Lugol's solution.

In a few instances I have been able to obtain a history of the "mother patch," "primitive patch" or "herald patch," appearing on the limb a short time after wearing new stockings. A certain number of adults stated that it appeared after taking a bath; in these cases the probability of improper drying, and a favorable soil for the development of fungi, might be considered. In many instances patches were found on the face, an occurrence far more frequent than is generally supposed. There were months when no cases were observed and others when groups would appear. During the latter part of March and the early April of 1901 as many cases were observed as during the entire previous four months. Many of the patients complained of neither local nor general disturbances; in others there was intense itching and, in some children, a febrile movement, with headache, malaise, and coated tongue. One case was combined with purpura, but no connection between the two diseases could be traced. The advocates of the arthritic theory might advance this combination in favor of their views.

To all appearances the disease is not contagious; we have, however, noted the affection in one instance of a man and wife.

Should you apply Lugol's solution to these irregular or circular patches, with chamois-like wrinkled centers, the deep mahogany or dark brown discoloration appears. Here also the more recent and more active lesions take up the stain more deeply than the older and declining ones, thus giving us a guide to the course of the disease.

The diseases most frequently confounded with the condition are: (*a*) syphilis, (*b*) disseminated ringworm, and (*c*) eczema.

The uninitiated when brought face to face with pityriasis rosea almost invariably diagnose macular syphilid, more especially when there is no itching, when a number of the lesions are in the erythematous stage, and when they follow the course of the ribs as they so often do in pityriasis rosea, as well as in syphilis. Leaving aside all other differential aids—the history, presence of the primary lesion or its scar, adenopathy, alopecia, mucous patches, color, absence of scaling—the application of Lugol's solution and the obtaining of a deep mahogany discoloration would make me strongly suspicious of pityriasis rosea. Never in a macular syphilid has the test made by me been positive.

Syphilis, of course, offers no protection against the disease, so that a combination as reported by Allen[3] must be remembered. In this particular case—and I have seen it in others—the rosy patches were stained dark brown by Lugol's solution and the syphilitic roseola a faint yellow.

Eczema is frequently diagnosticated for pityriasis rosea. I have seen the error mainly committed in children, perhaps because we are most of us accustomed to associate the disease with adult life. In children it has been my experience that pityriasis rosea in many instances is atypical in appearance, lacking for the most part the circular or elliptical form of patches with rose-colored border and wrinkled centers, and presenting more irregularly sized and shaped scaly areas. Here and there a typical patch will be seen, an important point in the diagnosis. In all of these cases Lugol's solution stains the lesion deep mahogany, or very dark brown, while in simple eczema a faint discoloration is seen at the best.

In adults, seborrheal eczema sometimes is a stumbling block in diagnosis. This affection, however, is in most instances associated with seborrhea of the head and face, involves, as a rule, the sternal and interscapular regions, presents more elevated, more greasy and more palpable lesions, has a darker border and thicker scales, and does not stain mahogany with Lugol's solution. Furthermore, this disease does not disappear spontaneously.

It is from disseminated ringworm that differentiation is so often necessary and so difficult, all the more so since the test is of no value here. In both conditions the reaction is positive, ringworm being positively and pityriasis rosea very probably of parasitic origin. The test then has its limitations, in so far as it can not differentiate one parasitic cutaneous disease from the other; it excites when positive a very marked suspicion of the parasitic nature of the disease under diagnosis. In fact, when any cutaneous lesion responds to this test it is to my mind strong presumptive evidence that it is parasitic, and is treated on that basis. This is, of course, an inference drawn from its action in diseases positively known as parasitic.

In differentiating pityriasis rosea from disseminated ringworm we must then look to other aids than the iodin test. If we find the tricophyton the diagnosis is of course assured. In its absence, however—and the detection of the fungus in disseminated ringworm is not always a simple matter—a history of other cases in the family must be sought. Contagion is common in ringworm and very uncommon, if it occurs at all, in pityriasis rosea. Pityriasis rosea occurs more suddenly, involves a greater portion of the body in a shorter space of time, is more irregular in shape and its border is not so marked, and never papular or papulo-vesicular.

The ordinary ringworm of the body, tinea circinata, as found on the face, neck, hands, etc., need not engage much of our attention. Suffice it, that this responds to Lugol's solution; the raised border, whether papulo-vesicular or crusty, appears deep mahogany, at times almost black, in marked contrast to the faintly tinged center. After successful treatment one can follow almost daily the diminution in intensity of the stain, until finally, at the time of cure, no reaction takes place.

Diagnosis of ringworm is usually a simple matter, but there is one condition with which I have seen it confounded; I refer to the circular form of contagious impetigo—impetigo circinata. There are some few cases of this condition in which the lesions closely resemble tinea circinata; they have a circular form, a raised edge, a healed center, and there may be a history of other cases in the family; they are differentiated by the fact that the edge is more friable and crustaceous, that there usually exist other lesions of contagious impetigo in association with pediculosis capitis, that the trichophyton is not found and that they do not take up Lugol's solution.

Eczema marginatum or trichophytosis cruris occurs where opposing skin surfaces are kept in contact for a long time, and is seen most frequently on the inner

3. Medical Record, Oct. 22, 1898.

surface of the thigh, buttocks, peri-anal region, axilla, and under surfaces of the breasts in women. When associated with the sharply defined border diagnosis is simple and is rendered more so by the fact that the edge stains mahogany with Lugol's. In other cases, especially on the thigh, there is no distinct border, but more of an irregular, broken line, with outlying patches of various shapes and sizes. It is in these doubtful instances that a response to Lugol's shows the similarity of this process to the ordinary eczema marginatum.

Though Kaposi, Köbner and Pick have demonstrated the presence of fungi in the epidermic scales, it is no easy matter to find the trichophyton, and for me the main guide in doubtful instances has been the appearance of a deep mahogany stain upon the application of Lugol's solution. Apart from being an aid to diagnosis the solution is an excellent method of treatment. As the condition improves the areas take up the color more faintly and finally not at all.

In mycotic eczema, which by its very name signifies a parasitic origin, this test appears to advantage. Despite the fact that absolute proof of its parasitic nature is wanting, in its configuration, obstinacy and response to Lugol, it follows the truly parasitic diseases so closely that it is safe to assume that subsequent observation will place it under that category.

In conclusion let me state that:

1. For teachers who give classroom demonstration, Allen's iodin test will serve to bring into greater prominence visible parasitic lesions and into view pale, hidden, and sometimes invisible ones.

2. A positive reaction to Lugol's solution in the form of a deep mahogany or dark brown discoloration is strong presumptive evidence that the lesion is parasitic. In the absence of absolute proof of the parasitic nature it is of the greatest aid and in the presence of a parasitic skin lesion, it serves to make assurance doubly sure.

3. It is not of service in differentiating one parasitic disease from the other; this must be accomplished by other clinical and microscopical data.

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THE ORIGIN OF CARCINOMA OF THE STOMACH FROM CHRONIC ROUND ULCER OF THE STOMACH.

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Since I had seen a very instructive case of combination of carcinoma of the stomach and chronic round ulcer, in November, 1893, it has always seemed to me that the stomach is the organ most suited for the study of the origin and development of carcinoma.

The case referred to was observed clinically from 1893 to 1895, when the patient died, and the postmortem examination revealed, in the pyloric region, a large ulcer, the lower edge of which was carcinomatous, while the mucous membrane and the upper edge showed no carcinomatous degeneration whatsoever. The difference between the condition of the two edges of the ulcer was too striking to be ignored, and caused me to give further thought to the matter. It then occurred to me that only mechanical influences could explain the different conditions of the two edges of the ulcer. The mechanical factors coming here into play are, the irritation caused by the food and the contractions of the stomach, which force the food into certain directions. It can be easily understood that the qualities of friction caused by the two factors named must have been very different on the upper and the lower margin of the ulcer, as the food would slip easily over the former, while on being forced toward the pylorus, hard rubbing of the lower margin would be caused by the contents of the stomach. Hard particles of food, such as crusts of bread and crisply fried meat on passing the precipice formed by the lower edge of the ulcer, must necessarily cause considerable irritation.

If our observations in this case as to the localization of the carcinoma are not merely accidental, if it can be shown that similar conditions are the rule, rather than the exception, then we are forced to admit that the mechanical factor is indeed one of the most prominent, if not the most prominent cause of carcinoma. It will, however, require much study to state with exactness which part of the margin of ulcers in different parts of the stomach are those most exposed to friction, as the different forms and sizes of ulcers, their localization, adhesions and dilatation of the organ and misplacements of the same, will have to be carefully considered in each individual case. In the pyloric region conditions are very simple, and we may take it for granted that as a rule the lower margin of the ulcer, which is on the pyloric side of the same, is most exposed to mechanical irritation, and should, therefore, as a rule, show the beginning of carcinoma; while the upper margin becomes involved very much later.

I shall now report the observations I have made since the year 1895, and shall also review the cases of combination of carcinoma and ulcer of the stomach found in literature, in reference to the question before us. In doing this, I shall only consider cases in which an operation or postmortem examination have shown that combination of carcinoma and chronic round ulcer of the stomach really existed. Some of the cases which I found in literature are a little doubtful, but the source of error is so small that I do not intend to eliminate them. It may be mentioned that my own cases came from my own clinical material and from a very limited postmortem practice, which allows the conclusion that carcinoma and ulcer of the stomach occur together much oftener than even those are willing to admit who, like Zenker, have long ceased to believe in the rarity of this condition.

It must be taken into consideration, furthermore, that all over the world comparatively few cases are examined postmortem, and because of this the frequency of the condition is not revealed. Clinically, we can not help but believe that the development of carcinoma very often follows in the wake of an ulcer, even though the material for observation is not large.

I shall now bring, as the first case, one of adeno-carcinoma of the stomach, which had developed from a very small, typical ulcer, measuring only one centimeter in diameter. Up to the observation of this case, I had always supposed that carcinoma developed only from larger ulcers and such as had existed for a long time. Therefore, whenever I had had occasion to diagnose a fresh ulcer of the stomach, I had made a good prognosis, not only as to a prompt healing, but also as to more remote consequences. This case has taught me to be very careful and to consider the possibility of the development of carcinoma in every ulcer as a danger not to be ignored. I now make two prognoses for round ulcer of the stomach: The immediate prognosis refers to the healing of the ulcer, the disappearing of the symptoms—

particularly the pains—the danger of hemorrhages and perforations; the more remote or late prognosis considers stenosis of the pylorus, consecutive dilatations of the stomach, etc., but particularly the very frequent complication with carcinoma. *The early prognosis of the round ulcer of the stomach is fairly good, the late prognosis is quite bad.*

CASE 1.—Mrs. G., 59 years of age, came from a healthy family, but a brother died at the age of 42 years, of carcinoma of the stomach. The patient herself, at the age of 23, had dull pains in the epigastrium, which commenced with vomiting, that occurred several times daily, and lasted three months. Every year similar attacks occurred, which lasted for two or three months; the last one continued, with interruptions, from June, 1899, up to the time of death of the patient, on Oct. 19, 1899. While the very anemic patient had been under my care in the summer of 1899, she was given the rest treatment, with the usual dieting, as is prescribed in cases of ulcer of the stomach. Her pains disappeared entirely, and after four weeks' treatment she was allowed to go home, being free from all symptoms. A month later, pains of a dull, gnawing character developed, becoming very intense and lasting as the case advanced. The patient became more anemic, and, as she had to be kept under the influence of morphin continually, operation was advised in the belief that a carcinoma was developing from the supposed ulcer. The operation was performed by Dr. Malcolm L. Harris, who removed a round piece of the wall of the stomach, having a diameter of 4 centimeters from the region of the lesser curvature, a little upward from its middle portion. On the outside of the dissected piece, inflammatory thickenings were found, which included a lymphatic gland of hemorrhagic condition. The very weak patient died after two days. The postmortem examination showed that the stomach wound had closed, there was no leakage and no infection. It should be mentioned that a large renal calculus was found in the pelvis of the left kidney.

Description of the Resected Piece of the Wall of the Stomach.—Observation of the inner surface of the resected piece showed in its center a circular defect, with a diameter of one centimeter a *very* small typical round ulcer surrounded by mucous membrane in a condition of chronic catarrh, and on one side, involving about one-third of the edge, two small, whitish nodules which together had a diameter of 1.2 centimeters, and which, as later microscopic examination revealed, represented an adeno-carcinoma. The illustration (Fig. 1) only shows one-half of the resected piece, as the other half was imbedded, stained and examined microscopically. Later, the half shown in the illustration was used for microscopic examination, so that all parts of the ulcer and the small growth have been well examined. Microscopically it was shown that the small, round defect was really a true open ulcer that had no tendency whatever to heal. The mucous membrane was strongly and uniformly infiltrated with round cells from which resulted a broadening of the intertubular spaces. The glands of the mucous membrane were much elongated, more or less tortuous, and their lumina, at the upper end, were dilated. Very high cylindric epithelial cells lined the glands, and their nuclei were rich in chromatin. The small growth itself showed similar changes of the intertubular tissues and also of the glands, only much more exaggerated. The glands were more tortuous, like corkscrews, their middle and deeper portions more dilated and lined by a high, cylindric epithelium, the nuclei of which were also very rich in chromatin. Towards the muscularis mucosæ, the interglandular, cellular infiltration increased, the position of the glandular tubulæ became more and more irregular, and here also dilatations of the glands and much branching of the tubules were found. Some of the tubules appeared filled with epithelial cells, and they penetrated the muscularis mucosæ, growing into the submucosa and even into the muscularis, surrounded by an irregularly distributed round-cell infiltration. The lymphatic gland, which was found on the outside of the dissected piece, showed a hemorrhagic condition all through, but no metastases. The stomach itself, which was removed postmortem, showed the changes of chronic gastritis and a thickening of the muscularis along the suture; further ulcers or scars were not found.

This case is interesting for different reasons: 1. Because such a small ulcer was found complicated with carcinoma. 2. Because we can not very well say that this ulcer was a product of the carcinoma, as it still showed all the characteristics of the typical round ulcer of the stomach, and as the new formation had only involved a small part of its edge. 3. Clinically, this case is of very great importance, as it shows that the disappearing of the symptoms of ulcer of the stomach during a rest cure, will not permit of our concluding positively that the ulcer has healed. It will be remembered from the history that all the symptoms had disappeared during the rest cure, and yet we have found that the ulcer showed no visible tendency to heal, even microscopically. It is impossible to say in this case that the part of the margin of the ulcer on which the carcinoma developed was also the part where friction of food was greatest.

CASE 2.—This case I have not observed clinically, and no history is at my disposal. As the illustration shows, there is a large, and but slightly elevated tumor mass, which involves almost the whole circumference of the stomach. This is a carcinoma, in the center of which (Fig. 2) we see clearly the quite well-defined edges of a typical round ulcer of the stomach, the whole margin of which is involved and from here the growth has spread quite evenly in all directions. The carcinoma is surrounded by perfectly smooth, glossy mucous membrane which shows the extremely developed effects of a chronic, atrophic gastritis. This case also shows the development of carcinoma from an ulcer, but it has no bearing on the principal question which interests us, and I may say here that we have little cause to expect much in this respect from the small typical round ulcers, as we will but very seldom find the carcinoma so early that it only involves a part of the edge, the rest becoming involved rather rapidly. However, these cases must be recorded and also carefully studied.

CASE 3.—Mr. S., 62 years of age, comes from a healthy family and has always been healthy. His habits have been good, but he has always had a great fondness for sweet pastry. At the age of 30, he suffered from dyspeptic symptoms, lost flesh, became very anemic, and after this he always complained of great sensitiveness of the stomach. About three years before his death he felt badly for some time, as pains in the stomach occurred after meals, which were of a very trying character. Occasional fainting spells set in and the patient lost steadily in weight. About a year before his death, the patient had a hemorrhage from the stomach a few moments after I had stated the presence of free hydrochloric acid in the gastric juice. Then came several hemorrhages from the stomach, and after much pain the patient died on Nov. 14, 1895, at the age of 64.

At the postmortem examination a large irregular ulcer was found in the pyloric region, the longest axis of which was at right angles to the long axis of the stomach. The basis of the ulcer penetrated deeply, in a diagonal direction, into the walls of the stomach, and was here overlapped by a precipice formed by the inner parts of the walls of the stomach along the lower margin. This margin was very much thickened and elevated above the rest of the mucous membrane; it narrowed the pylorus, and was carcinomatous all through. One of the lateral margins of the ulcer (the left one in Fig. 3)

was also carcinomatous and had become ulcerated, while the right one, and the greater part of the upper, had not yet become involved. As Fig. 4 shows, there were a number of metastases in the liver.

If this case does not represent an exception, then it shows very plainly, indeed, that the formation of carcinoma, occurring from an ulcer in the pyloric region, develops from the parts which form the lower margin and which overlap the lower cavity of the ulcer; that means, from those parts which are exposed to the greatest friction by the food.

CASE 4.—Mr. X., 45 years of age, was ailing for about one and a half years, suffering from symptoms of an ulcer of the stomach, such as dyspeptic symptoms, severe pains after meals, anemia, and emaciation; as the pains became more intense, and more constant, the patient commenced to lose in weight more rapidly. He vomited considerably and at last could retain nothing, and died very suddenly, after an attack of intense pain in the region of the stomach.

The postmortem examination of the stomach revealed a chronic gastritis and a long, slit-shaped, deep ulcer (Fig. 5) just in front of the pylorus, with its longest axis at right angles to the longitudinal axis of the stomach. The ulcer deeply undermines the lower margin which overlaps to form a precipice, as in the previous case. This lower margin, as well as the right one, are carcinomatous, while the upper margin is free from carcinoma. The pylorus is filled with carcinomatous masses which have completely obstructed it, and at the basis of the ulcer a small opening is found which is due to a rupture of those parts. This case shows just as clearly as does Case 3 what I intend to prove.

CASE 5.—Mr. X., 72 years old, comes from a healthy family, but one brother died of carcinoma. The patient was always healthy and could eat and drink what he pleased without experiencing discomfort from the stomach. About eighteen months before his death, he drank some cold beer, which caused him to vomit and brought on such pains in the stomach that he could not take any food for a whole day. He recovered from this, but at times would vomit, particularly when he was warm and drank cold beer. He never vomited blood. From this time, although feeling well, he continued to lose in weight and soon meat caused him to vomit. About a year before his death, the patient commenced to suffer a great deal; the pains which up to this time had only come on after the drinking of something cold, now occurred between meals and at night. Five or six months before his death, he commenced to vomit blood, and the vomiting of food became more and more frequent, until one night, after an attack of pain in the stomach, death occurred, under similar circumstances to those in Case 4.

At the postmortem examination a large ulcer was found in the pyloric region, reaching into the pylorus (Fig. 6). The ulcer was not deep, and, therefore, the lower margin did not overlap as much as in Cases 3 and 4. Carcinoma had developed from the lower pyloric edge and from one side-margin, while the upper edge of the ulcer was unaffected. The pylorus had become completely obstructed by carcinomatous masses and rupture of the basis of the ulcer had occurred here, as in Case 4. This case also is well adapted to prove our contention.

Case 6 was observed by Dr. H. J. Haiselden. The patient, a man of 41 years, had had disturbances of the stomach, with a burning sensation for about eleven and a half years. After he had been sick for three months, a physician diagnosed a gastritis. There were periods when the disturbances would cease, but they would return shortly, and a half year ago intense vomiting began, although the patient could sometimes eat raw eggs and other food and retain it. On Feb. 7, 1901, the patient was admitted to the hospital, vomited a brownish liquid and died soon afterward.

The postmortem examination of the stomach revealed a shallow ulcer which reached from the pyloric region into the pylorus to the duodenum, and from the sides of which a carcinoma had developed in the pylorus, while the upper margin presented no carcinomatous involvement (Fig. 7). Considerable thickening of the mucous membrane from chronic gastritis was present. In this case the lateral margins of the ulcer in the pylorus have been those most exposed to friction. When the pyloric ostium is narrowed by thickenings, its walls being rigid from chronic gastritis, hypertrophy of the muscularis, etc., carcinoma may sometimes develop here without an ulcer being present. I have seen many of these very shallow ulcers in the pylorus and believe that carcinomata develop from them. In such cases all traces of the superficial ulceration are soon lost and the real mode of origin of the carcinoma is then not suspected.

As it is necessary, in order to prove the origin of carcinoma from ulcer of the stomach, not only to consider the pathologic findings, but also the clinical course of the two diseases, I shall bring now, in addition to my own cases here reported, a number of short extracts from such cases, to be found in the literature. This will enable the reader to form his own conception of the clinical varieties of the conditions in question, which is better than if he confines himself to my own, probably too well outlined clinical picture. From the great number of cases of combined ulcer and carcinoma of the stomach, or rather, carcinoma developing from ulcer of the stomach, which I have observed clinically, I have only reported those in which either an operation or a postmortem examination and a thorough microscopic study have revealed the exact nature of the conditions found. It is not to be expected, nor is it advisable, that I should require a microscopic diagnosis in the cases cited in literature, for, while microscopic reports are desirable, their absence would compel me to eliminate nearly all the references. I shall, therefore, bring only such cases from the literature in which the genuineness of the reported findings is guaranteed by the name of the author, and the clinical history is borne out by the pathologic findings, either at operations or postmortem. It is not only my intention thus to report cases, but also to give the opinions of men whose statements are worthy of consideration.

Dittrich[1] described eight cases of ulcer of the stomach, complicated with carcinoma.

CASE 1.—Woman 50 years of age, with hardening of the pyloric portion and a medullary carcinoma in its mucous membrane, on the posterior wall of the stomach; near the lesser curvature were several deep cicatrices from ulcers. (Case not sufficiently well described.)

CASE 2.—Man 50 years of age, fruit-vendor. Medullary carcinoma of the pylorus and a deep stellate scar from an ulcer near the lesser curvature, on the posterior wall of the stomach. (Case not well enough described.)

CASE 3.—Woman 70 years of age, medullary carcinoma in the middle part of the stomach. Several star-shaped scars from ulcers. (Not very well described.)

CASE 4.—Woman of 35 years. Carcinoma of the liver and the peritoneum; a medullary carcinoma of the glands of the abdomen and in the mucous membrane of the stomach, in which deep, stellate scars are found. (Not adequately described.)

CASE 5.—Woman 55 years old. Great shrinking of the stomach, caused by many scars from ulcers. Medullary carcinoma of the cardia. (Not well enough described.)

CASE 6.—Woman 75 years of age. Medullary carcinoma

reaching from the duodenum into the pylorus, on the posterior wall of the stomach; near the lesser curvature, an ulcer with fibrous edges; at its basis, the pancreas. (Not well enough described.)

While it is probable that in these six cases of Dittrich carcinoma has developed from ulcer, this does not fully develop from his description. The next two cases are better.

CASE 7.—Man of 46 years, with round ulcer of the stomach the size of a silver dollar. At the basis of the ulcer, the pancreas, and developing from the edges of the ulcer, a carcinoma.

CASE 8.—Woman of 54 years. Hardening of the pylorus and medullary carcinoma of its mucous membrane. Stenosis of the pylorus. On the posterior wall of the stomach, near the lesser curvature, a round ulcer the size of a silver dollar. At the basis of the ulcer, the pancreas, and at its upper margin, a medullary carcinoma.

After observing these eight cases Dittrich comes to the rather strange conclusion that no particular connection exists between the ulcer and the carcinoma, believing that the simultaneous development of both is purely accidental, and he considers this proven by the location of the carcinoma at the ulcer margins, without involvement of the bases of the ulcer. Carcinoma always develops from the edges and only secondarily involves the basis of those ulcers.

We will add another one of Dittrich's cases:

CASE 9.—Man 50 years of age. Scirrhus and medullary carcinoma of the pyloric region. In front of the carcinomatous part, surrounded by perfectly healthy mucous membrane, a deep cicatrized ulcer. (This case seems to be similar to my cases, Nos. 3, 4 and 5.

Hughes[2] describes a case in which, without a doubt, carcinoma has developed from ulcer of the stomach, and as the clinical history, which dates from the year 1844, is very clear and characteristic, it shall be reported:

"Mary Ann Ramsey, 43 years of age, a widow, was admitted to Allison's wards in the Royal Infirmary, on August 25, 1844. She reports that her menstruation had ceased to come two years ago, and that she has been ailing since. For ten years she has had pains in the stomach after meals, off and on, and after the cessation of the menses these pains have become more intense and more constant in character. In October she was treated in the Infirmary for her stomach trouble, and at the time of her leaving the hospital she was free from pains. Three months after her dismissal, her pains returned, accompanied by sour belching and transitory diarrheas, which symptoms continued. Blood vomiting did not occur."

"Postmortem Findings.—The stomach was much dilated and filled with semi-liquid masses. The pylorus much narrowed by a carcinomatous new formation, so that it was hardly possible to introduce the fourth finger. Reaching from the pylorus, an ulcer was found on the posterior wall of the stomach, two inches in diameter which had led to the formation of adhesions between the wall of the stomach and the pancreas. The margins of the ulcer were elevated almost an inch above the surface of the mucosa; they were of soft consistence, breaking down under the touch of the finger and forming a dirty, whitish mass. The basis of the ulcer was formed by the muscularis, etc."

Hughes has also made a microscopic examination, and he says concerning it: "The tumor mass consisted of a fibrous matrix, the meshes of which were filled with numerous cancer cells and free cells." But, after these observations and this description, Hughes says: "This case is extraordinarily interesting in many ways, and, according to my opinion, it brings a strong proof of the spontaneous healing of carcinoma in an organ." It is to be deplored that Hughes came to such wrong conclusions after his careful clinical and anatomical examinations.

H. Lebert[3] describes the following cases:

CASE 1.—Carcinoma of the heart, the pleura, the peritoneum, the lymphatic glands. The stomach is large and ulcerated, with scirrhus of the pylorus; at the lesser curvature is an old, simple chronic ulcer of the stomach, adherent to the pancreas, and at its basis are small, carcinomatous nodules—there are none at the edges of the ulcer.

If Lebert had made a careful microscopic examination of the edges of the ulcer he would have found carcinoma there.

CASE 2.—Carcinoma of the pylorus, with slight stenosis. Above it is an ulcerous depression, the walls of which are adherent to the liver, which shows no cancerous elements. A simple ulcer.

CASE 3.—On the anterior wall of the pyloric region, a carcinoma of the size of a pigeon's egg, and slight stenosis. In the middle of the lesser curvature, a stellate, pigmented scar, from a simple ulcer.

CASE 4.—Man of 35 years. Has had pain in the stomach for six years. Signs of ulcer, and later, signs of carcinoma. Postmortem examination reveals perforative peritonitis. The stomach occupies a slanting position and the pyloric portion is considerably lower than normal. In the anterior wall of the stomach, 2 cm. from the pylorus, a large round ulcer of seven cm. diameter, bulging upward, is found. On the anterior wall, near the lesser curvature, the basis of the ulcer is very hard, and covered with warty excrescences, which measure up to 1.5 cm. in thickness. The ulcer is adherent to the head of the pancreas and the examination shows carcinomatous elements. The muscularis is thickened to some distance. In this case, a simple ulcer must have existed for years, and become carcinomatous later.

CASE 5.—Carcinoma of the stomach, in the region of the pylorus. At the larger curvature a simple, not hardened and not infiltrated ulcer, with a perforation into a space closed by adhesions outside of the stomach.

CASE 6.—This man of 46 years has had symptoms of chronic ulcer of the stomach for six years. After a marked improvement, it had recurred six months before his death and gradually all symptoms of a deeper carcinomatous affection developed. At the postmortem examination, carcinomatous nodules were found in the liver and in the pyloric portion a large shallow ulcer, which appeared healed and cicatrized, but at its margin there was thickening and at its basis, firm infiltration, both of which on microscopic section were found to consist of carcinoma cells. In this case, without doubt the long-existing, simple ulcer, has become the site of a carcinomatous infiltration, from which have originated metastases of the liver.

CASE 7.—In this case, which is similar to the preceding one, the stomach adhered to the liver, and at the place of such adhesions there was an ulcer of the stomach at the lesser curvature, which was of the size of a dollar and in which an artery had become eroded; in consequence, two pieces of coagulated blood were found in the stomach. The basis of the ulcer was smooth, somewhat hardened and its edges showed walled hardening, while two secondary carcinomatous nodules were found in the mucous membrane near by. All the anatomical characters indicated secondary carcinomatous affection of the margin of an ulcer.

CASE 8.—The stomach shows a scar from a chronic ulcer at the lesser curvature, and touching the scar, a carcinoma at the lesser curvature.

Brinton[4] reports the following case which he observed in April, 1857:

The patient, a woman of 41 years, married, had, in the course of twenty years, suffered from pains and disturbance of the stomach. At the age of 41, intense pains in the epigastrium appeared and there was vomiting after meals, the latter becoming more and more frequent and troublesome. The patient was admitted to the Royal Free Hospital where she found relief and where she improved, after dieting for some time. After

THE ORIGIN OF CARCINOMA OF THE STOMACH FROM CHRONIC ROUND ULCER OF THE STOMACH.

G. FUETTERER, M.D.

Fig. 1. — Adenocarcinoma of the stomach, originating from a very small typical round ulcer. (Fütterer's Case 2.) Natural size. The resected piece was cut in two and we see only one-half of the ulcer and a little more than one-half of the adenocarcinoma, which appears in form of two grayish nodules at the lower edge of the ulcer.

Fig 2.—In the center a well outlined round ulcer and spreading from here in all directions a shallow carcinomatous growth. (Fütterer's Case 2.)

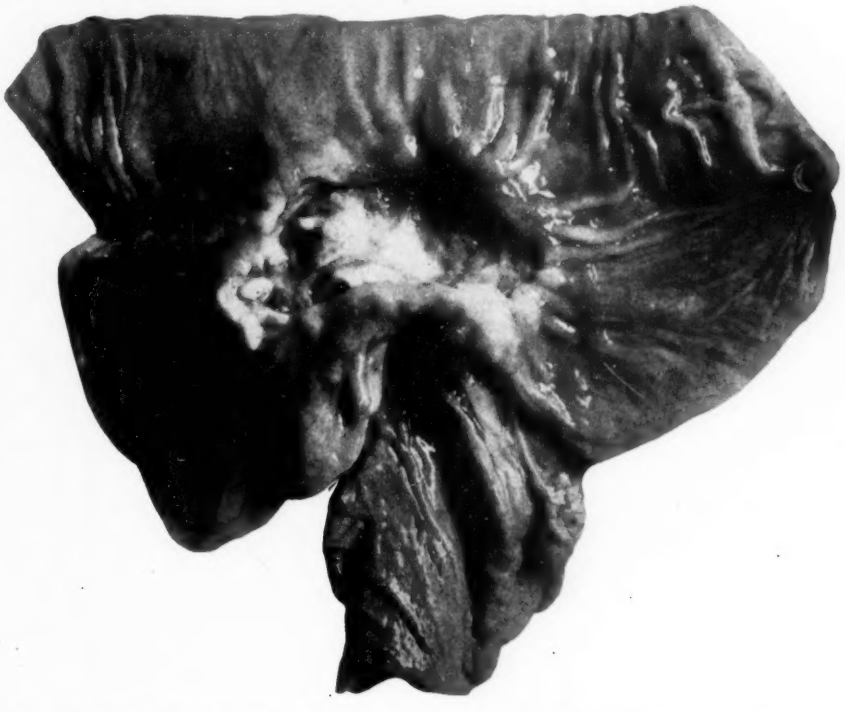

Fig. 3.—Stomach and piece of duodenum opened. In the pyloric region a large and deep chronic ulcer, the lower or pyloric carcinomatous edge stands out firmly infiltrated while the left edge shows carcinomatous ulceration. The upper and right margins are as yet almost free from carcinomatous changes. (Fütterer's Case 3.)

American Medical Association Press. 1902.

Fig. 4.—Cut surface of liver with six whitish metastatic nodules. (Fütterer's Case 3.)

Fig. 5.—Stomach opened. Chronic gastritis. Deep chronic ulcer in the pyloric region; from the lower and right margins has developed a whitish carcinomatous mass that obstructs the pylorus. (Fütterer's Case 4.)

Fig. 6.—Large ulcer in the pyloric region from the pyloric and lower edge of which has developed a whitish carcinomatous mass that obstructs the pylorus. (Fütterer's Case 5.)

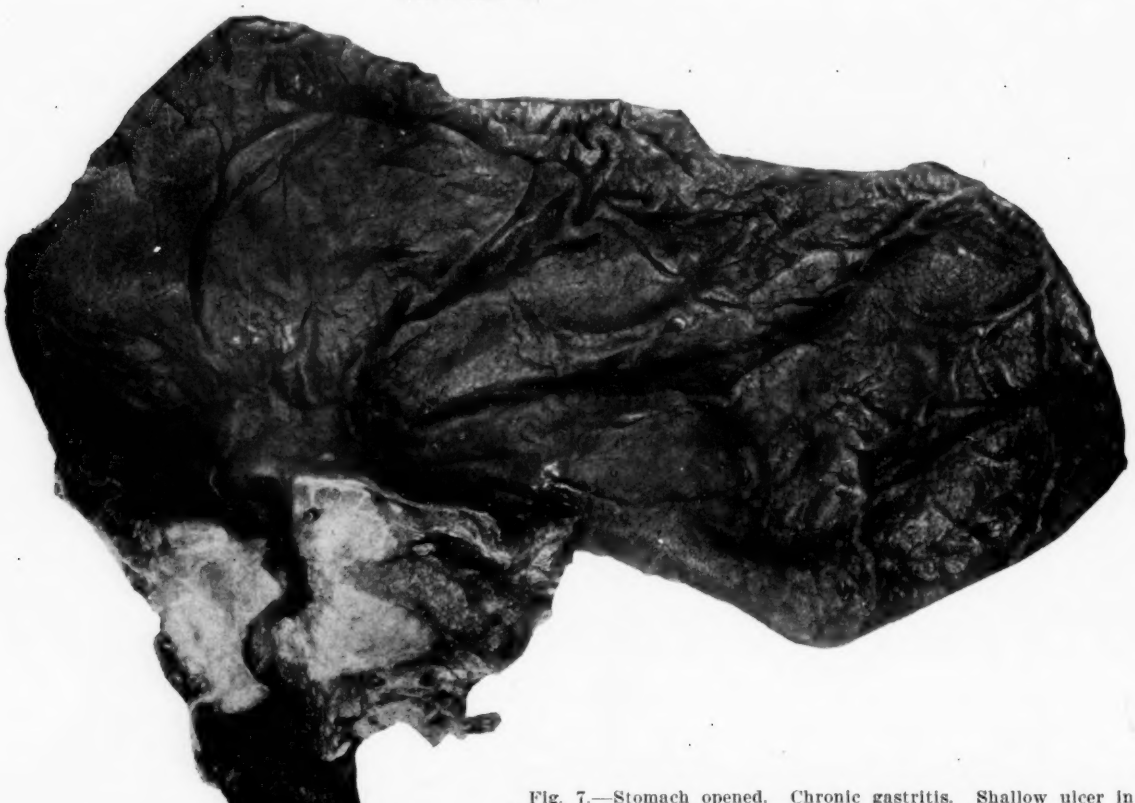

Fig. 7.—Stomach opened. Chronic gastritis. Shallow ulcer in the pylorus, from which has developed a whitish carcinomatous mass that narrows the pylorus. (Fütterer's Case 6.)

Fig. 8.—Stomach opened. Chronic gastritis. Typical chronic round ulcer of the stomach.

Fig. 9.—Microscopical section from the edge of a typical round ulcer of the stomach, showing the upward bending of the muscularis as described by Hauser.

Fig. 10.—Profile of the specimen represented on Fig. 5. Typical "fishhook-form" of the ulcer, with carcinoma, as described by Fütterer.

Fig. 11.—Typical chronic gastric ulcer produced in a rabbit, with great thickening of the mucosa, mainly on one edge, but also some on the other. Adhesions between stomach and liver.

a little the pains returned, she became emaciated and died within a few days.

At the postmortem examination, in the middle third of the stomach a large ulcer was found, which had neither affected the cardiac portion nor the pyloric portion of the stomach. It had caused such a contraction of the middle part of the stomach as to change this to a small tube into which the thumb could hardly be introduced. There were adhesions with the liver and the abdominal coverings, but particularly at the place of contraction were found carcinomatous masses, measuring up to one-half inch in thickness. "It was one of those cases in which an ulcer of the stomach had undergone carcinomatous changes. The carcinoma had developed from the edge of the ulcer and had then grown into its basis." In another place Brinton says: "As the ulcer of the stomach has no properties which protect against carcinoma, we must not be surprised to find its scars even in stomachs which later become affected by the more deadly malady. Open ulcers and carcinomata are not seldom found together, and we must suppose that in such cases the carcinoma has been added to the ulcer and not the ulcer to the carcinoma. According to my knowledge, it has not been proven by authentic observations that an ulcerated stomach has become affected with carcinoma without the ulcer itself becoming affected—at least its edges or its basis." *From this it is seen that Brinton had a remarkably clear and correct conception of the conditions in question.*

The histories and postmortem findings so far reported surely speak plainly for the origin of some cancers of the stomach from gastric ulcer, and the following authors, Rokitansky, Liston, Waldeyer, Leube, Zenker and Potain have expressed themselves to the same effect.

Rokitansky[5] (1849): "There are cases in which we can see plainly that a carcinoma has developed from an ulcer of the stomach." This is the first plain, clear and positive statement of its kind that I have found in literature.

Liston[6] says: "The fact that a carcinoma can develop from a simple ulcer of the stomach seems already to have been well proven."

Waldeyer[7] (1872): "I do not hesitate to say that a simple ulcer may, in the course of time, be changed to a carcinoma, if the epithelial elements, instead of undergoing degeneration, take part in the process of proliferation on the edges of the ulcer."

Leube[8] (1874) rightly considers the observations of carcinoma with chronic round ulcer of the stomach not only interesting from the anatomic and pathologic standpoints, but also in reference to its etiology.

Zenker[9] (1882), who demonstrated a specimen in the Nürnberger Aerzteverein, expressed the opinion that a carcinoma had developed secondarily from an old chronic ulcer of the stomach. This specimen was then described thoroughly by Hauser in his well-known monograph.

Potain[10] (1883) also says that the carcinoma of the stomach has a great tendency to develop from old scars.

All the clinical and pathological observations and the opinions which we have so far cited are of great importance. But the question whether it is really true that carcinoma comes secondarily to an ulcer of the stomach, or whether the ulcer or the scar are a product of the carcinoma, can not be finally decided from these considerations. Hauser[11] in his excellent monograph which appeared in 1883, under the title, "The Chronic Gastric Ulcer, Its Mode of Cicatrization and Its Relations to the Development of Carcinoma of the Stomach," has thrown more light upon this subject. Hauser studied and described the above-mentioned case of Zenker and also a carcinoma of the stomach which had been resected by Heinecke, and he observed peculiar conditions of the muscularis which he rightly considered to be characteristic of an ulcer of the stomach. He says: "Closely above the edge of the ulcer, we see muscularis going upward in a diagonal direction towards the mucous membrane, and to become connected with the muscularis mucosa which here is interwoven with a great deal of connective tissue. In this way the muscularis becomes thoroughly separated from the basis of the ulcer, which here consists only of a thick layer of connective tissue, and the line of separation is here, as the muscularis is turned upward, formed by the lower parts of the muscularis." Again he says: "In a primary carcinoma of the stomach which has become ulcerated, we will never find such a sharp division between the muscularis and the other tissues at the basis of the ulcer; and this line will never be formed by the lower zone of a muscularis that has been turned upward."

It is not hard to convince ourselves of the correctness of Hauser's views, and I give here two illustrations of which the first shows the muscularis in a simple gastric ulcer (Fig. 9), and the second in gastric ulcer with carcinomatous changes (Fig. 10). The second illustration shows the profile of the ulcer, on which we can observe the upward bend of the muscularis toward the mucosa, very satisfactorily. *But it shows something also, which I consider of no less importance. That is a typical fish-hook shape.* From my observations, I have concluded that we may safely take it for granted that an ulcer found together with carcinoma of the stomach, has been a typical ulcer, when this fish-hook form is found. I think we must differentiate between very shallow, irregularly formed ulcers, typical round ulcers, and rather multiform ulcers of the stomach, which often are very deep, for it is surely not right to call a thing round which is not round, and we do that if we call all ulcers of the stomach round ulcers. We can not say that the larger ulcers have a very characteristic form, for, although they are called "ear-shaped" it often requires a very great deal of imagination to discover the similarity between the form of such an ulcer and an ear. While the forms as seen from the surface are so variable and have nothing characteristic, I wish to state that the profile shows forms which are far more constant. The formation of the fish-hook-shaped profile underlie the same laws as those which determine the progress of the ulcer into the deeper layers of the stomach walls and this guarantees the constancy of its occurrence. In the smaller or more superficial ulcers no typical fish-hook form can be expected, and it is then that the condition of the muscularis, as described by Hauser, gives valuable information.

After Hauser's observations bearing on the relation of the muscularis to the basis of the ulcer, and after my own observations concerning a characteristic profile —the fish-hook shape—it may be taken as proven that carcinomata do develop secondarily from ulcers of the stomach. Since the publication of Hauser's monograph in 1883, the following cases have been reported:

Hanot[12] observed a case in a woman 42 years of age; a carcinoma had developed from the edges of an ulcer, which was located in the pyloric region.

Thiersch[13] saw a carcinoma at the basis of an ulcer.

Rosenheim[14] reported three cases:

CASE 1.—Woman, 42 years of age, suffered for ten years from attacks of gastritis. For nine months she had constant nausea, a feeling of pressure in the epigastrium and sensitiveness to pressure; black vomit. Postmortem findings: Carcinoma in the pyloric region, which had developed from an ulcer.

CASE 2.—Woman, 58 years of age. Insufficiency of the mitral valve for twenty years. Six months ago, pains in the epigastrium developed, which became more violent as time advanced, and which weakened the patient very much. Later, there was black vomit. The pains and vomiting continued up to the death of the patient, a year after the appearance of the first symptoms. As emaciation had progressed during the last months of her life, a tumor could be felt under the left costal arch. The postmortem examination revealed a scirrhus which had developed from an ulcer.

CASE 3.—Woman, 64 years of age, had suffered from stomach trouble for three months. The stools were tar-colored and the patient often vomited bile. Postmortem findings: Near the pylorus an ulcer with eaten edges, which were carcinomatous. Only a small part of the margin was not involved by carcinoma, and this was the pyloric margin.

Krukenberg[15] describes a case in which a glandular carcinoma had developed from the margin of a cicatrizing ulcer.

Goodhart[16] reports the postmortem findings in a man 32 years of age, consisting of a glandular carcinoma near the pylorus with a long excavation that makes it appear probable that the primary affection had been an ulcer of the stomach.

Häberlin[17] reports fourteen cases in which carcinomata have developed from ulcers of the stomach, but I have only selected four of them:

CASE 1.—Man of 30 years, had suffered from stomach trouble for three years. He vomited almost daily, but never blood, and the postmortem examination showed a deep ulcer of the pylorus surrounded by nodular growth.

CASE 2.—Woman of 39 years, admitted on Oct. 21, 1886. Six years before, at the age of 33, she was very anemic, and during the last six months before her death emaciation developed. There were pains in the stomach, vomiting, but no blood. Died on Dec. 19, 1896. Postmortem examination revealed carcinoma which had developed from gastric ulcer.

CASE 3.—Man of 66 years, admitted on Sept. 29, 1885, had suffered from pains in the stomach since about his 26th year. Frequent vomiting and emaciation. Died on Oct. 16, 1885. Postmortem examination showed carcinoma and ulcers at the pylorus.

CASE 4.—Woman of 51 years, admitted on Oct. 5, 1886. Complained of gastric pains and vomiting; no hemorrhage; emaciated. She died on Dec. 15, 1886. Postmortem findings: Carcinoma and ulcer.

Koch[18] reports the case of a woman of 36 years in whom an ulcer was diagnosed, but a suspicion of carcinoma was entertained, because of rapid emaciation, unsuccessful ulcer treatment and the presence of large quantities of lactic acid. Postmortem examination showed the development of a carcinoma from a scar in the pyloric region.

Gravenhorst[19] saw a case of carcinoma that had developed from ulcer of the stomach, without causing any clinical symptoms.

Maillefert:[20] In his third case cicatrizing ulcers had produced an hour-glass shape of the stomach which was surrounded by carcinomatous masses.

Hemmeter and Ames:[21] Man of 56 years who had been under observation for two years and at first showed plain symptoms of ulcer of the stomach. Postmortem examination: Near the pylorus an ulcer, and a carcinoma had developed from the pyloric margin of the ulcer.

Hickman:[22] Woman, 29 years of age, had had gastric pains before she was admitted to the hospital. Postmortem examination: Dilatation of the stomach. In the pyloric region, at the lesser curvature, was a scar one and one-half inches in diameter, and nearer the pylorus a carcinoma.

To facilitate references, we shall now bring the cases already mentioned, and others, in the form of a table.

LIST OF CASES FOUND IN THE LITERATURE, IN WHICH CARCINOMA HAS DEVELOPED FROM CHRONIC ULCERS OF THE STOMACH.

No.	Reported by	Sex.	Age.	Localization of the ulcer.	Localization of the carcinoma.
1	Dittrich	F.	50	Posterior wall near lesser curvature.	Pyloric portion.
2	"	M.	50	Deep stellate scar on posterior wall near lesser curvature.	"
3	"	F.	70	Middle of posterior wall	Middle of posterior wall
4	"	F.	35	"In the usual place" (pylorus?	Not given.
5	"	F.	55	Numerous scars from ulcers	Cardiac region.
6	"	F.	75	Posterior wall near lesser curvature.	Reaching from the duodenum into the pylorus.
7	"	M.	46	Ulcer showed the pancreas at its basis.	Edges of the ulcer.
8	"	F.	54	Posterior wall with pancreas at its basis.	Upper edge of the ulcer.
9	"	F.	50	Pyloric region	Lower margin of the ulcer.
10	Hughes	F.	43	Pyloric region, posterior wall	Lower margin of the ulcer
11	Brinton	F.	41	Middle of the stomach, hour-glass contraction.	At the contracted portion.
12	Lebert			At lesser curvature	Base of ulcer and pylorus.
13	"			Above the carcinoma	Pylorus.
14	"			Middle of the lesser curvature	Anterior wall of pyloric region.
15	"	M.	35	Anterior wall, 2 cm. from pylorus	Upper margin of the ulcer.
16	"			Near the pylorus and the larger curvature.	Pylorus.
17	"	M.	46	Pyloric portion	Edge and base of ulcer.
18	"			Lesser curvature	Edge of ulcer.
19	"			Scar at the lesser curvature	Edge of scar.
20	Hauser	M.	69	Pyloric region	Edges all around the ulcer.
21	Hanot	F.	42	Pylorus	Edge of ulcer.
22	Thiersch	M.	26	Pyloric region	Pylorus.
23	Rosenheim	F.	42	" "	"
24	"	F.	58	" "	"
25	"	F.	64	" "	Edges of the ulcer.
26	Krukenberg				Edges of the ulcer.
27	Goodhart	M.	32	Pyloric region	Pyloric region, the thickening being greater near the pylorus.
28	Haberlin	M.	30	Pylorus	Pylorus.
29	"	F.	39	Pyloric region	"
30	"	M.	56	Pylorus	"
31	"	F.	51	Pyloric region	Pyloric region.
32	Tapret	F.	40	Pylorus	Edge of ulcer.
33	Eisenlohr	M.	49	Pylorus	Lower edge of the ulcer.
34	Koch	F.	36	Pyloric region	Edges of ulcer.
35	Westphal	M.	48	In the carcinomatous mass	Lesser curvature near the cardia.
36	Gravenhorst	M.	43		
37	Pitt	M.	57	Pyloric region	Lower edge of the ulcer.
38	Maillefert	M.	24	" "	Pylorus.
39	"	M.	47		Edge of one of the ulcers.
40	Packard			Pyloric region	Edges of ulcer.
41	Biach	M.	48	" "	Edges and basis of ulcer.
42	Hayem	M.	56	" "	At ulcer.
43	Dieulafoy	M.		Pyloric region and lesser curvature.	Upper margins of ulcer.
44	Hemmeter and Ames	M.	56	Pylorus	Lower edge of the ulcer.
45	Hickman	F.	29	Pyloric region	Pyloric margin of the ulcer.
46	Billings	M.	28	" "	
47	Fütterer	F.	59	Near the lesser curvature, between cardiac region and middle of stomach.	Edge of the ulcer.
48	"			Larger curvature	In middle of stomach.
49	"	M.	64	Pyloric region	Edges and surrounding parts of the ulcer.
50	"	M.	45	" "	Pyloric edge of the ulcer.
51	"	M.	72	" "	As above.
52	"	M.	41	" "	As above.

Many of these cases have been incompletely described, sometimes sex and age have been omitted or the localization of ulcers and carcinoma and their exact relations to each other have been but vaguely referred to. I am convinced that a more accurate description would give us a deeper insight into the relations existing between carcinoma and ulcer of the stomach, and I also believe that good illustrations would be valuable and would often make up for deficiencies in description. A thor-

ough observation and description of cases would soon show that our standpoint in the matter is well taken. Of course, the number of cases thus found will be but small as compared with cases that are clinically observed, where no operation is performed and no postmortem or no microscopical examination has been made to put the stamp of correctness on the clinician's opinion. Our table contains fifty-two cases—females nineteen, males twenty-four, sex not given, nine. The age ranges from 26 to 75 years—in the females from 29 to 75, in the males from 26 to 72. In 10 cases the age was not given. The localization of the ulcer is not given in forty-five cases; pyloric region in thirty-seven cases; lesser curvature in nine cases; larger curvature in one case, the middle of an hour-glass shaped stomach in 2 cases. The following authors mention the development from the edges of the ulcer: Dittrich, Cases 7, 8, and 9. Hughes and Brinton note the development of carcinoma from the scar of an hour-glass shaped stomach. Lebert, Cases 4, 6, 7, and 8; Hauser, Hanot, Rosenheim, Case 3; Krukenberg, Goodhart, Tapret, Eisenlohr, Koch, Pitt, Maillefert, Packard, Biach, Hayen, Dieulafoy, Hemmeter and Ames, Hickman, Fütterer and Billings. The localization of carcinoma at the lower pyloric edge of ulcers was noted by Dittrich, Case 9; Hughes, Goodhart, Eisenlohr, Pitt, Hemmeter and Ames, Hickman and Fütterer, Cases 3, 4, and 5; but not one of these authors, with the exception of the last, has considered the importance of this fact, or has tried to explain it, while we consider it of the highest importance in explaining the etiology of carcinoma in general.

CONCLUSIONS.

After what has been said, we would emphasize the following points:

1. If a carcinoma develops from a chronic ulcer of the stomach, then this development occurs from those parts of the edges of the ulcer which are most exposed to mechanical irritation by the contents of the stomach.

2. In the pyloric region, it is the lower pyloric margin of the ulcer which is most exposed to mechanical irritation and from which carcinoma develops. But other parts of the edges may be the ones involved when dilatations and adhesions have changed the position of the organ.

3. Development of carcinoma from ulcers of the stomach in the pyloric region occurs with great frequency, while such a development occurs less often in other parts of the stomach.

4. If what has been said under our third conclusion is correct, then we must in all cases in which an ulcer of the stomach or its scar narrows the pylorus, recommend early a gastro-enterostomy, to prevent the development of carcinoma. If a gastro-enterostomy has been made, then the mechanical irritation of the ulcer in the pyloric region by food is reduced, and the severe friction necessary to produce a carcinoma will probably not occur.

5. A patient suffering from the consequences of a stenosis of the pylorus, particularly if this is caused by ulcers and scars, should, if a gastro-enterostomy is not performed, be advised to eat slowly and little at a time, and to be particularly careful about carbohydrates and especially hard crusts of bread; they should avoid crisply fried, or other coarse food, and they should, as much as possible, confine themselves to liquid or semiliquid foods. A good deal of fatty food should be recommended.

6. Elderly people in particular, who have but few or no teeth and a saliva which is insufficient in quantity and quality must be most carefully advised as to their diet, and to such cases taka-diastase should be administered.

7. From the fact that carcinoma does not develop from the large ulcers alone, but may be developed from the very smallest, the prognosis of ulcer of the stomach is bad. Our aim, therefore, should be to prevent the formation of ulcers, rather than to heal them after they are formed, and this may be done, at least to a certain extent, by the energetic treatment of all cases of chlorosis and secondary anemia that come under our observation.

8. After reviewing the literature, we are now in a position to say that no one before us has laid stress on the fact that carcinoma of the stomach, which develops from an ulcer, originates from certain parts of their edges, and that this, while of importance in itself, will prove to be of great value when it is sufficiently considered in reference to the etiology of carcinoma in general.

My experimental work on the stomachs of animals has furnished sufficient corroborating facts, inasmuch as proliferation of the elements of the mucous membrane of the stomach occurred on edges of ulcers which had been produced by experiment. The histological qualities of such proliferations were those of an adenocarcinoma, as described in our Case 1, and, while I do not wish to state that I have produced a malignant growth with all its inherent peculiarities and sequelæ, such as, for instance, metastasis and cachexia, I do wish to give it as my opinion that histologically there was adeno-carcinoma, and that I fully believe that further work in this direction will lead to the production of a true carcinoma by our method. The last cut represents such an ulcer in the stomach of a rabbit, and it is easy to notice the difference in the condition of the mucous membrane at the upper and the lower edge of the ulcer. For a more detailed description of the finer histological changes, I must refer the reader to my monograph, which has already been mentioned.

34 Washington St.

ERRATUM.—In figure No. 1, for "nodules at the *lower* edge of the ulcer" read "nodules at the *upper* edge of the ulcer."

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The Zambaco Prize.—The French Society of Dermatology announces that the Zambaco prize of 800 francs will be awarded in 1903 for the best work on any subject in dermatology or syphilography received before Nov. 30, 1902. Articles should be sent to the secretary, Dr. Hallopeau, 91, Boul. Malesherbes, Paris. Author's name must not appear on the article but accompany it in a sealed envelope.

PNEUMATIC DIFFERENTIATION IN THE TREATMENT OF ORGANIC DISEASE OF THE HEART.*

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It is the purpose of this paper to present a physical demonstration of the value of pneumatic differentiation in the treatment of organic cardiac disease, and to adduce clinical evidence in proof of the accuracy of such demonstration. The propositions on which this treatment is based were definitely formulated before any clinical application was made. Such application was begun with absolute confidence as to the character of the results, but, it must be confessed, without the least suspicion of their extent. The clinical evidence presented is derived from nine years' use of the cabinet in the treatment of, essentially, all forms of organic cardio-vascular disease. The proposed physical demonstration requires:

I. Consideration of the physics of the circulation and its relation to tissue nutrition as the basis of functional activity.

II. Determination of the dynamic and nutritive disturbances involved in pathic conditions, and the possibilities of their modification.

III. Presentation of the physics of pneumatic differentiation and its action, as applied to the circulation, in modifying pathic conditions.

VASCULAR PHYSICS.

1. It is a physiological axiom that the function of the heart and vessels is, primarily, purely mechanical, and consists in the propulsion of blood in a given direction and appropriate quantity. This object is attained by the development of a permanent arterial tension, and alternating differential tensions in adjacent vascular cavities, the lower tension being always on the side of the direction of the blood current. Vascular tension is thus seen to be, from the standpoint of pure physics, the sole factor determining the circulation *per se*, and the point at which all disturbances of that circulation will be first manifest.

Were the sole effect of vascular tension that of blood propulsion, and the conditions under which this propulsion takes place constant, we might affirm that the absolute degree of tension was of no importance so long as the established differential tension ratios were maintained. But when we consider the mechanism concerned in the production and maintenance of these varying blood tensions, and their relation to nutritive interchange, it immediately becomes apparent that disturbances in tension ratios are pathic largely by very reason of their effect upon absolute tension. There is no longer any question as to the effect of persistent increased blood tension upon the vascular mechanism. Nor can it be denied that even minor grades of fixed increase are essentially pathic; for, although they may be attended by complete compensatory hypertrophy of the circulatory organs for a prolonged period, sooner or later the powers of nutritive repair fall below even this slight increased demand and circulatory failure results. But when the increased tension is itself the result, and compensatory of some cardiac lesion, it and its consequent compensatory hypertrophy react, each to increase the other, thus hastening the progress toward the point where compensation fails; so that such increased tension becomes self-destructive through those very changes which it calls forth for its own maintenance.

Hence, so far as relates to the circulatory mechanism, we have this as our first proposition:

1. The maintenance of the circulation and the preservation of the vascular mechanism demands not only the continuance of differential blood tensions and their rhythmical alternation, but also the restriction of the absolute degree of such tensions below an established limit.

Turning to the relation of absolute tension to nutritive interchange, since pneumatic differentiation, as will be shown later, lowers absolute tension while increasing tension ratios and thus develops increased quantitative flow, we have to consider only the effect of such modification of circulation. While twenty years ago much stress was laid upon the dependence of nutrition on vascular tension, recent investigations have seemed to show that the highest nutritive activity is determined by the quantitative blood supply rather than the tension.

2. However, as a clinical answer will be given later so far as bears upon the subject in hand, suffice to say here as a justified conditional proposition, that if full

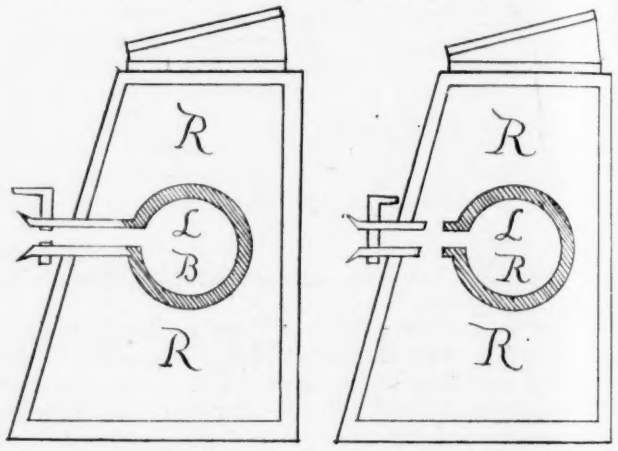


Fig. 1 Fig. 2

nutrition can be maintained through increased blood flow under lowered tension, such a condition must afford relief to the vascular mechanism and, hence, tend to prolong its period of functional activity.

From these two propositions we deduce our first therapeutic premise: that any agent which maintains tissue nutrition and functional power, and lowers vascular tension, thereby relieving cardio-vascular strain, is, in character, an ideal therapeutic measure in organic cardiac disease.

DYNAMIC AND NUTRITIVE DISTURBANCES OF CARDIAC DISEASE.

II. The primary and only directly dependent result of essentially every cardiac lesion is a change in the absolute degree of blood tension and in tension ratios. This change consists of a decrease of tension in the systemic vessels and increased tension in some cardiac cavity. The result of the former is lessened blood flow, diminished tissue nutrition, and consequent arterial contraction to restore blood pressure and current. In response to the latter, which is now augmented by the reflex rise in arterial tension, there is developed a compensatory hypertrophy of the propulsive mechanism, which involves thereafter a persistent excess of force expenditure. So long as this hypertrophy and expenditure keep pace with the demands of increasing tension there is, physi-

* Read before the New York State Medical Association, October 23, 1901.

cally speaking, full compensation. But hypertrophy and tension react to increase each other and thus hasten the passage into degeneration with lessening propulsive force, decreasing arterial tension, and failing systemic nutrition, i. e., death.

It is thus seen that every cardiac lesion excites, solely through vascular tension, reactionary changes, which are compensatory and conservative only within certain limits, beyond which they become destructive, and that the seriousness of any given lesion will be measured, 1, by the absolute amount of increased tension produced; 2, by the capacity for hypertrophy in the tissues called upon to supply compensation, and 3, by the character of the lesion itself, whether fixed or progressive. Each of

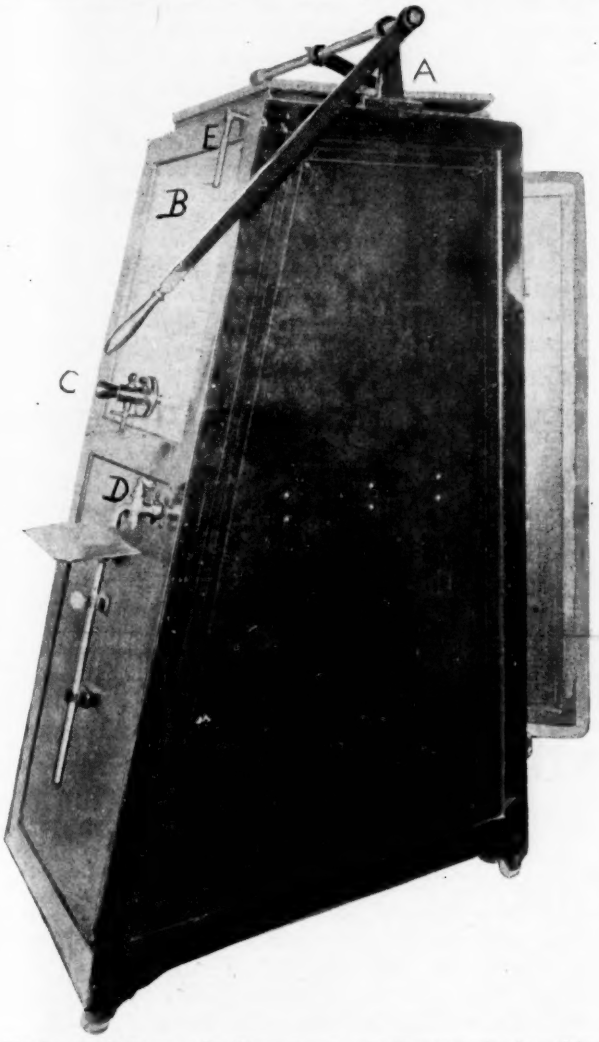


Fig 3.—A. Bellows. B. Glass front. C. Stopcock for breathing tube. D. Stopcock for restoring atmospheric pressure in cabinet after treatment. E. Mercurial gauge.

these factors has its special bearing on the possibilities of relief, but the indications for an ideal treatment are precisely the same from all. For, since in every case it is the increased tension which excites all the secondary changes, and its tendencies for evil are compensated only by organic hypertrophy, the duration of any given case will be determined by the ratio between the increased tension and nutritive metabolism in the compensating tissues. Hence, the indications in cardiac disease are to decrease vascular tension and increase cardiac nutrition. From this we have our previous therapeutic premise made more specific, thus: Only such agents as decrease vascular tension and coincidently maintain or increase nutrition throughout the entire system are ideal therapeutic measures in organic cardiac disease.

Recurring from this to the physics of the circulation, and noting the fact that the blood current, upon which depends nutrition, is maintained only by rhythmical alternations in the tension ratios between adjacent vascular cavities, it is evident that any agent which fulfills the requirements of an ideal therapeutic measure, must not only lower vascular tension, but also develop those alternations of tension required to maintain the circulation.

PNEUMATIC DIFFERENTIATION.

III. Upon this basis we turn to the physics of pneumatic differentiation and its application to organic cardiac disease. To appreciate clearly the action of pneumatic differentiation, as applied to the circulation, it is imperative that one keep constantly in mind that fixed term of blood tension which counterbalances atmospheric pressure; for it is upon its power to render dynamic this force that the whole treatment rests. When, for instance, we speak of aortic pressure as so many millimeters of mercury, the absolute tension of the blood is that amount plus barometric pressure at the moment. It is in this commonly ignored term, called reserve tension, that we find the positive force which the pneumatic treatment develops.

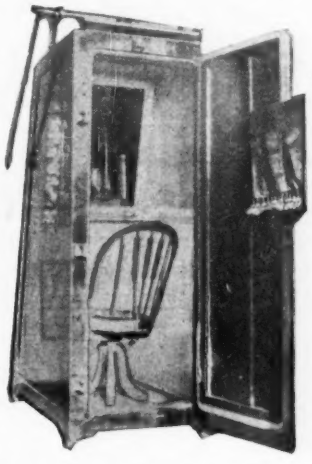


Fig. 4.—Interior view of cabinet, showing ozone generator through glass front.

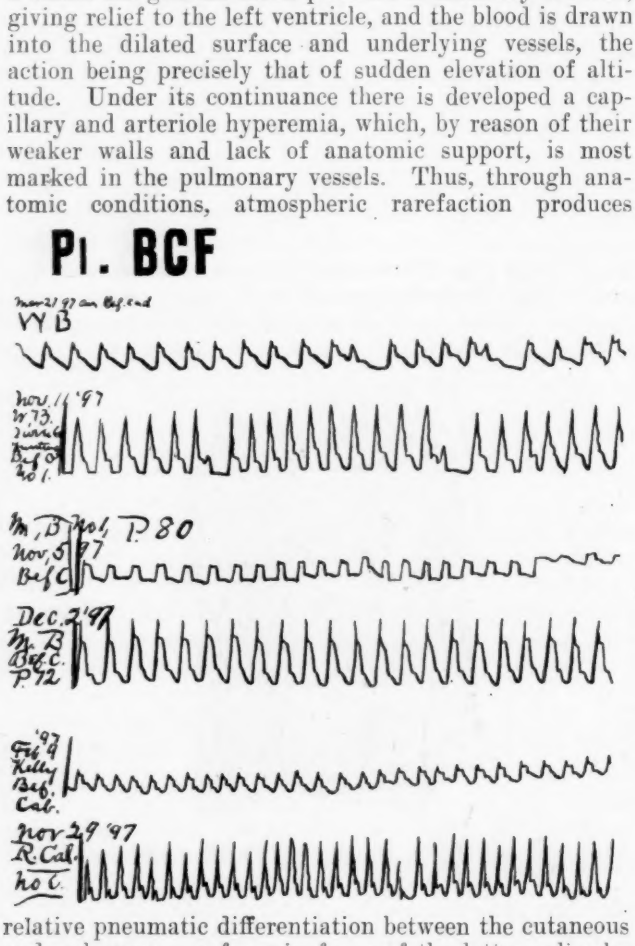
Failure to recognize the potency of this force and its relations to the circulation led to illogical use and condemnation of the cabinet years ago, and still prevents acceptance of the imperative deductions as to its therapeutic value in both pulmonary and cardiac disease.

The apparatus employed in the application of pneumatic differentiation consists of a cabinet, which can be closed practically air-tight, of sufficient size to contain one person. On the top is a bellows by which the contained air can be rarefied or compressed at will. In one side is a stop-cock, through which and an attached tube, the patient's lungs may be instantly connected with or shut off from the outside air, thus instantly changing the pressure upon the pulmonary surfaces and within the thorax from barometric to that of the air within the cabinet. The use of this apparatus in the application of pneumatic differentiation, by which term is meant a differential atmospheric pressure on the cutaneous and pulmonary surfaces, and the physics of its action in modifying the circulation will best be shown by following a patient through the process of treatment.

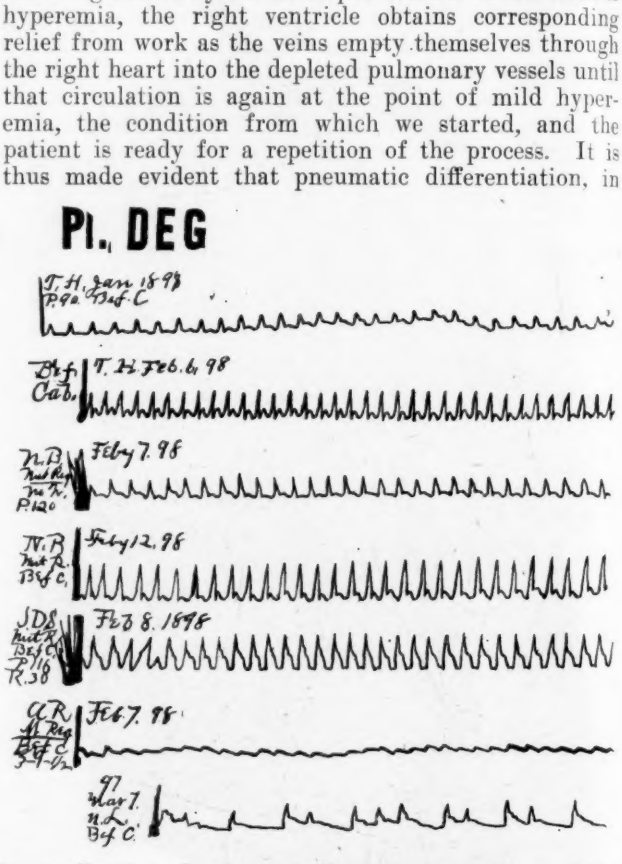
Reference may be made to Figs. 1 and 2, in which concentric circles represent the systemic and pulmonic

circulations and the shaded interspace the thoracic wall. In Fig. 1 the lung is connected with the outside air and under barometric pressure (LB). In Fig. 2, with the cock closed and the connection broken, both the lung and cutaneous surface are under diminished pressure (LR).

Given a patient in the cabinet, a rarefaction of the contained air is produced of, we will say for convenience, two inches of mercury. The pressure upon the entire cutaneous and pulmonary surfaces is thereby reduced one pound to the square inch and an equivalent amount of reserve tension made dynamic (Fig. 2). As a result the general blood pressure is instantly lowered, giving relief to the left ventricle, and the blood is drawn into the dilated surface and underlying vessels, the action being precisely that of sudden elevation of altitude. Under its continuance there is developed a capillary and arteriole hyperemia, which, by reason of their weaker walls and lack of anatomic support, is most marked in the pulmonary vessels. Thus, through anatomic conditions, atmospheric rarefaction produces



relative pneumatic differentiation between the cutaneous and pulmonary surfaces in favor of the latter, whereby the blood is drawn from the systemic into the pulmonary vessels under lowered tension. With the circulation thus at the point of mild pulmonary hyperemia, the patient takes the breathing tube in his mouth, when, as the cock is opened, barometric pressure is instantly restored to the pulmonary and thoracic circulation, which, be it noted, includes the cardiac cavities, and the pneumatic differentiation, now made absolute, is as quickly shifted in favor of the systemic circulation (Fig. 1). The tension ratio between the two circulations is increased, yet with the high tension factor in the thorax only that of barometric pressure. The entire systemic circulation is virtually under the influence of a huge cup. The result is obvious; the blood is drawn from the lungs through the left heart and arteries into the dilated capillaries, the point at which nutritive interchange takes place, almost without aid from the ventricle, and thence flows freely into the veins, which, as the differentiation is maintained, become distended by an excess of low-tension blood. These changes occur while the patient takes a slow, deep inspiration with, possibly, two or three seconds holding the breath at the end. During this time the left ventricle is, practically, relieved of all work, and, with the pulmonary circulation under only barometric pressure, there is no impediment to the passage of blood from the right to the left heart or strain of the right ventricle. Thus, under lowered tension, the previous localized hyperemia is transferred, through a hastened circulation, from the lungs to the systemic veins. But, before this veinous hyperemia reaches the point of slowing the circulation, the valve is closed, the tube dropped from the patient's mouth and instantly the differential pressure is shifted in favor of the lungs again (Fig. 2). Now, with the previous differential ratio augmented by the developed tension of the veinous hyperemia, the right ventricle obtains corresponding relief from work as the veins empty themselves through the right heart into the depleted pulmonary vessels until that circulation is again at the point of mild hyperemia, the condition from which we started, and the patient is ready for a repetition of the process. It is thus made evident that pneumatic differentiation, in



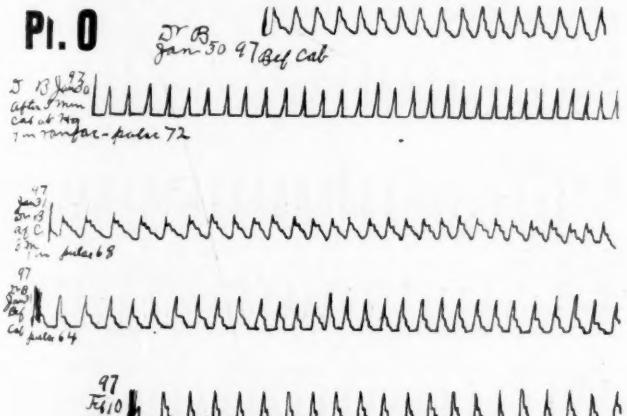
its application, develops rhythmical alternations of the tension ratio between the pulmonic and systemic circulations, and thereby produces a quickened and augmented blood flow under lowered vascular tension.

What, then, are the relations of this process to the pathic results of the several cardiac lesions?

1. Aortic Obstruction: In this case, while the pathic increase of tension in the ventricle is due to an unalterable condition, the total of ventricular strain is the sum of valvular obstruction and arterial tension. This latter term, which tends to increase with the obstruction, can be diminished by pneumatic differentiation with coincident increase of circulation. The treatment is, therefore, applicable to this lesion. Its power to afford relief will vary with the ratio between tension and obstruction and must be measured by clinical results. Statements bearing upon that point, here as elsewhere, are, therefore, given upon personal authority and not as part of the scientific demonstration. Upon this basis we say that, in all, save the most severe, cases of non-progressive aortic obstruction, and in the progressive cases of old age, arterial tension is the dominant term and can usu-

ally be reduced to such a degree as more than to counterbalance the obstruction, and hence to cause absolute reduction of ventricular strain below the normal, and thus give definite rest to the heart during the period of treatment. Even when there is ventricular failure and low arterial tension the compression of the thoracic organs acts to support the ventricular walls and affords very appreciable relief.

2. Aortic Insufficiency (Regurgitation): It is in this lesion where the destructive results are invariably progressive, even when the valvular insufficiency is constant, that pneumatic differentiation finds its most perfect application. For the first pathic increase of tension in the ventricle, and the consequent eccentric ventricular hypertrophy, which reacts to increase still further arterial tension, depend directly upon arterial tension, the force over which pneumatic differentiation has the most perfect control. Later, when, from failing circulation, a lowered nutrition excites arterial contraction and a still further destructive rise of tension, similarly pneumatic differentiation, by increasing blood flow and nutritive supply, does away with the necessity for high tension and thus makes the low tension which it produces for the relief of cardiac strain compatible with full systemic nutrition. The physics of its application should be evident. During inspiration (Fig. 1), corresponding to six or eight heartbeats, the pulmonary circulation and heart walls are supported by barometric pressure; the systemic circulation is cupped one pound



to the inch, arterial tension lowered, the regurgitant force and current thus diminished, the ventricle allowed to empty itself completely and recover its tonicity, while the blood is hurried through the capillary circulation into the veins. During expiration (Fig. 2) this surplus of blood is drawn into the lungs ready for another circle.

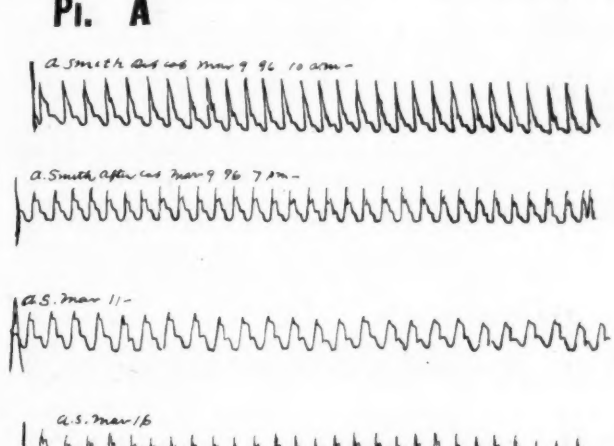
The clinical results are, first, immediate relief of all sensations of distress and the substitution of a sense of rest and refreshment—I have seen a patient's condition change from that of distinct angina to complete relief within five minutes—and second, rapid amelioration and often permanent disappearance of all subjective symptoms with corresponding decrease in the objective signs.

3. Mitral Insufficiency: The amount of reflux and consequent pathic tension is directly dependent on arterial tension. The application of the treatment is, therefore, the same as in aortic lesions. But, as compensation is here from the right heart through the pulmonary vessels, the possibilities of permanent relief are not as great as in aortic insufficiency. Clinical experience confirms this, for while the immediate relief is often quite as pronounced as in aortic lesions, it is seldom as prolonged.

4. Mitral Obstruction: It must suffice now to say that the form of treatment described above is not applicable to this lesion. Time also compels us to reserve discussion of its relations to the varied forms of cardiac dilatation and muscular weakness for a later paper.

In comparing this method of treatment with accepted therapeutic measures we find but two sets of agents which require consideration: 1, the drugs represented by nitroglycerin, and 2, those measures which dilate the capillaries through reflex demand for widespread tissue repair. While the first class act more powerfully to reduce arterial tension, and thereby afford very great relief from cardiac strain, they do not tend to hasten circulation, save in so far as the heart gains propulsive power through decreased opposition. Indeed, the increased frequency of the pulse under their influence shows that their effect is rather to slow the circulation, and this often makes impossible their persistent use. These drugs, therefore, fulfill but one of the requirements of an ideal treatment, and in so doing oppose the other.

The second class is covered, essentially, by the Oertel and Nauheim treatments, in each of which diffuse capillary dilatation is secured through reflex demand for increased nutrition and tissue repair. Of the two the Nauheim is obviously the better, being essentially the



Oertel treatment plus the baths. Yet even the Nauheim treatment does not claim to lower arterial tension, but, while offering relief to the heart through reduction of capillary obstruction, at the same time calls for a responsive increased force expenditure. Indeed, Schott states that "it is considered a serious symptom when, in any case undergoing balneologic and exercise treatment, the blood pressure is lowered, and that when the tonometric figure is as low as 65 or 60 mm. of mercury, therapy is of little avail and the bath and exercise both contraindicated." Still further, as showing the direct power of this treatment to influence the circulation, Heinemann, an ardent advocate, says, "that the patient who is being given the Nauheim treatment, and who leaves the bath in the forenoon to encounter later in the day the varied forms of life's mental annoyances, can never hope to receive much or permanent benefit. Freedom from mental irritation during the period of treatment and for a period after treatment is a *sine qua non* to its success."

In comparison with the foregoing, what does pneumatic differentiation accomplish? In cases with high

tension, representing the stage of attempted compensation, it reduces arterial tension, the basic factor of evil in all cardiac disease; it relieves cardiac strain and affords opportunity for tissue repair and recovery of muscular tone; and it simultaneously increases general systemic nutrition through augmented blood flow. When, on the other hand, low tension indicates failing compensation, it again through similarly increased nutrition restores functional power to the vascular mechanism whereby compensation is renewed and arterial tension brought back to the point of maintaining the circulation.

From the above presentation of applied pneumatic differentiation and previously deduced therapeutic propositions, we state, as our final conclusion which was to be demonstrated, that, from the standpoint of applied physics, pneumatic differentiation represents the nearest approach to an ideal treatment for organic cardiac disease of all measures at present available.

To what extent does clinical evidence support the accuracy of this conclusion? In reply we offer, first, sphygmographic tracings, and second, clinical histories, requesting that, for brevity, we be allowed to present them together without regard to logical sequence.

Plate BCF is presented in proof that sphygmographic tracings are of absolutely no value as an index of any specific cardiac lesion, but may be made accurate records of relative variations in arterial tension for the time during which they are made, which, by comparison, may prove permanent changes in vascular tension. Of these tracings the last, which is as typical as any one of aortic regurgitation, is the only one which was not from such a case. In the first, third and fifth there is not the least hint of such a lesion.

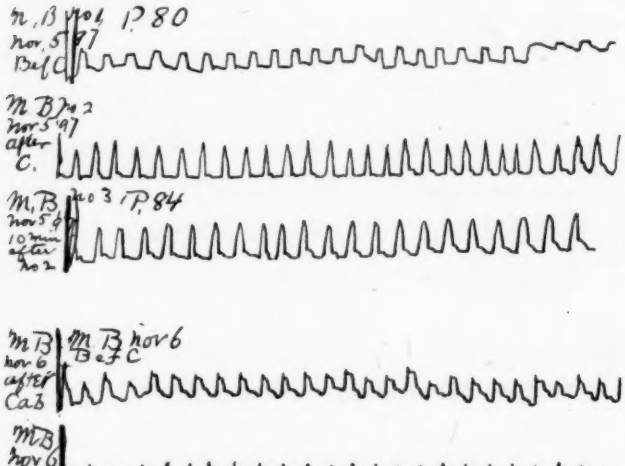
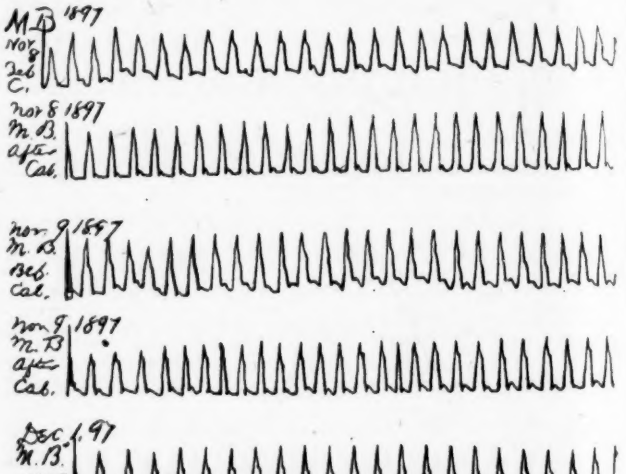


Plate DEG, all tracings from cases of mitral regurgitation, is further proof to the same effect.

Plate O shows the immediate effect of pneumatic differentiation on arterial tension pure and simple. The tracings are from a hopeless case of chronic Bright's disease, with arterial fibrosis and cardiac hypertrophy passing into failure. The second tracing, taken just after five minutes' treatment at only one inch rarefaction, shows practical obliteration of constant arterial tension and is in marked contrast with the first, taken just before treatment. The third and fourth afford a similar comparison for the second day's treatment, while the fifth, taken before treatment ten days later, compared with the first, shows that a certain degree of relief is given even in the hopeless conditions. This case is cited just because it presents the worst possible conditions for affecting arterial tension, and the results are, therefore, all the more conclusive.

CASE A.—Male, 38, coachman; was first seen at college clinic early in October, 1895. He has all the symptoms and physical signs of extensive aortic disease; double aortic murmur is heard anywhere on the chest and in the arteries; he has excessive eccentric hypertrophy and commencing dilatation; arterial and capillary pulsation in the extreme; he suffers severely and almost constantly from angina, which was developed acutely by the excitement of appearing before the class; he has not been able to work even in driving for over a year; he sleeps only in erect position and thus but little and interruptedly on account of angina, from which he obtains only partial and temporary relief by large doses (1/25 to 1/12 minim) of nitroglycerin repeated every hour or oftener.

Patient was given ten minutes' cabinet treatment twice a day for a week and then twenty minutes daily. He was suffering from angina on first entering the cabinet; this was greatly relieved the first day; after three days' treatment he slept prone nearly the whole night, and at the end of a week gave up nitroglycerin, except one or two doses the last part of the night. At the end of the second week he disappeared, to turn up again in March, 1896, with this report. At the end of his two weeks' treatment in 1895 he had secured work in the preparations for the horse show, where he had worked that week and the week of the show from early morning until late at night. He then went to Kentucky in charge of a carload of horses, and there got work on a stock farm. In about a month his angina returned, and he took to drink for relief; was soon obliged to quit work, and later returned to New York. His pulse when treatment was resumed (March 9, 1896), is shown in the first tracing, Plate A.



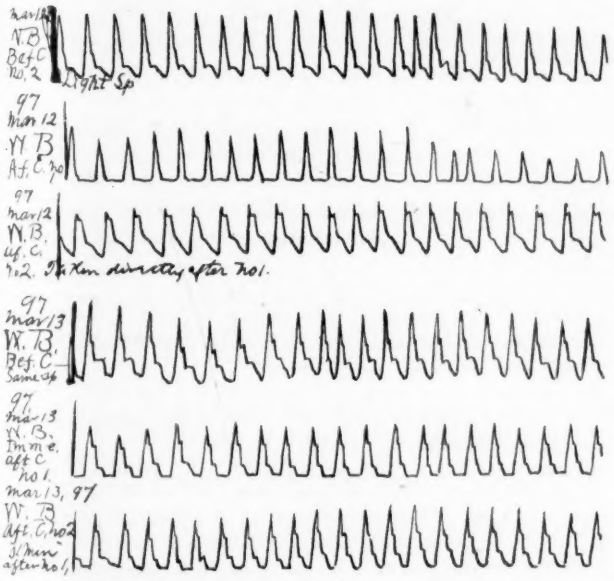
At this time his heart was so weak, his angina so nearly constant and so quickly excited by the slightest change in circulation, that even the treatment tended to develop it. During the first day, therefore, he was kept at the office all day and given four treatments of from five to ten minutes each. The effect is shown in the second tracing taken in the evening. The improvement is obvious, but his statements as to the subjective relief were even more decided. On the 10th and 11th he received three treatments of ten minutes each. The result of these three days' treatment is shown in the third tracing, which is near normal. His angina had entirely disappeared and he felt well. The fourth tracing, taken on the 16th, shows a retrograde change, due to whisky,

and thereafter he came for treatment only at irregular intervals, drinking heavily in the meantime.

CASE C.—Male, 40, laborer. As this case was taken solely for purposes of demonstration we beg to condense the history to a simple statement of diagnosis, which was aortic regurgitation, moderate arterial fibrosis, cardiac hypertrophy, and chronic Bright's disease. The patient was fairly comfortable so long as he remained quiet in the hospital, but suffered from dyspnea and thoracic oppression upon any marked exertion.

Turning to the tracings (Plate C) for the results of treatment, it seems difficult to imagine more conclusive proof of the power of pneumatic differentiation to reduce arterial tension and so augment tissue nutrition as to do away with the necessity for its recurrence. The first tracing was taken before any treatment whatsoever, and is typical of an extreme degree of high tension backed by a not over-strong heart. The second, taken directly after fifteen minutes' treatment, shows the same immediate effect upon arterial tension as was seen in Plate O, while the third, taken ten minutes later, shows, in comparison with the first, the extent of arterial and ventricular relief derived from a single treatment. The

Pl. B"



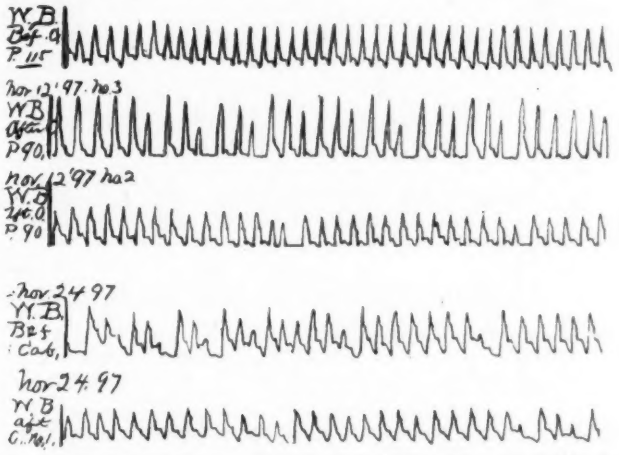
fourth, taken the next day before treatment, indicates, by comparison with the first, the persistence of that relief. It is seen that while the tension has returned in part, it has not reached its previous degree. The last, taken after treatment this day, shows how at times the treatment apparently has but little immediate effect upon tension while affording marked relief to subjective symptoms.

That the effect was there in this case, at least, appears from Plate C[1], of which the first pair were taken before and after treatment on the fourth, the second pair on the fifth, and the last on the twenty-fifth day from the beginning of treatment. For the first week treatment was given daily, afterwards three times a week.

This plate shows the practical permanency of the effect on tension, and, with the statement that soon afterwards the patient insisted on leaving the hospital and going to work, affords unanswerable proof of the power of pneumatic differentiation to control the circulation.

CASE B.—Male, 36; lawyer; single. Seven years ago, in 1885, he suffered from a most severe attack of endocarditis and aortitis. Such recovery as he made was gained only after nine months' absolute rest, most of the time in bed, and left him with an extensive aortic insufficiency but poorly compensated. On returning to town he attempted to continue his profession by limiting himself to office work, but the interruptions, at times of several months' duration, incident to recurring attacks of acute dilatation, soon forced him to relinquish even that. He retired to the country where, largely by accident, he became interested in what has proven an immense enterprise. This he was able to carry in its earlier stages because the work could be made to await his ability to do it. As the demands on his strength increased and became more imperative, however, the attacks of heart failure returned with increasing frequency and severity until, just as he was preparing to give up, he was prostrated by an unusually severe attack, and I was first called to attend him. This was seven years after his first attack, during which time he had been constantly under medical supervison. He presented all the symptoms and signs of extreme acute dilatation following aortic insufficiency. The pulse was intermittent, irregular and uneven to an extreme degree. The heart gave loud double aortic and systolic mitral murmurs. He could not lie down and even in the erect position angina was severe and persistent, while the throbbing in his head was even worse. He had learned by sad experience that digitalis only increased the former as did nitroglycerin the latter. My mental prognosis was death at any moment. At the end of about two weeks, however, under aconite, morphia and quinin, he was able to walk about his room without exciting serious increase

Pl. B[IV]



of cardiac irregularity. A few days later, Dec. 23, 1892, he received his first treatment by pneumatic differentiation. This was given daily for the first two months or so and then daily when he happened to be in town, which varied from two days to two weeks at a time, with intervals of from a day to a month at a time, during which he had no treatment. To summarize results and the history of the past nine years: Before the end of January, 1893, i. e., within less than six weeks, he resumed his business, which he has continued until the present moment, despite constantly increasing burdens, with but a single relapse. For three years he took practically no vacation, but in the spring of 1896, after a winter of unusual business strain, he asked permission to take a rest by a trip abroad, to which hesitating consent was given. Although the voyage was smooth he suffered, contrary to his habit, from seasickness. By the time he reached London he felt the warning headache and called a physician, who at once put him to bed.

On recovery he consulted, at my request, Dr. A. Ernest Sanson. By permission I quote from letters of Dr. Sanson and the attending physician, Dr. Edwards. The latter says: "Mr. B. came under my care on April 26. He had a very threatening attack of heart failure, with intermittent systole at frequent intervals, often every third or fourth beat. Obvious

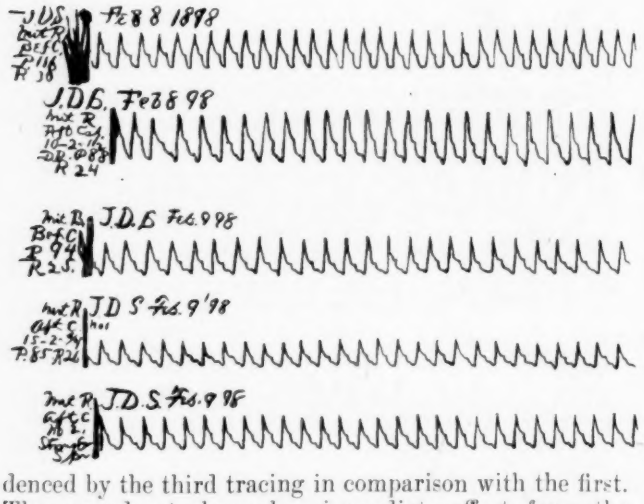
evidence of aortic and mitral disease with constant regurgitation at the mitral, and regurgitation at all kinds of pressure on the aortic valves. He has, of course, a heart which is permanently infirm and will at all times be gravely worsened by anxiety, worry or overwork."

Dr. Sanson says: "May 19, 1896. I have to-day examined your patient. . . . I find evidence of hypertrophied left ventricle, some dilatation and hypertrophy of the right chambers, a fusiform dilatation of aorta and abundant signs of obstruction and incompetency at the aortic valve orifice." And later: "February 27, 1898. I can only say that Mr. B. presented the signs of very grave aortic valve disease with consecutive changes in the heart so that the left ventricle had dilated to the production of the systolic murmur of mitral incompetency."

The patient reached home the last of May. Within a week he resumed his business and by the end of September both his systolic murmurs had disappeared, not to return since.

Turning to the tracings in this case, which, unfortunately, were not begun until 1897, Plate B² gives two instructive sets of three each. In each set the first tracing is taken just before, the second just after treatment, and the third ten minutes later. The first set is an excellent illustration of immediate tension reduction, shown in the second tracing, and of strong heart reaction in taking up the circulation at a higher tension, as evi-

Pl. E



denced by the third tracing in comparison with the first. The second set shows less immediate effect from the treatment, yet even here the development of a recoil wave and the elevation of the arterial notch are clearly seen.

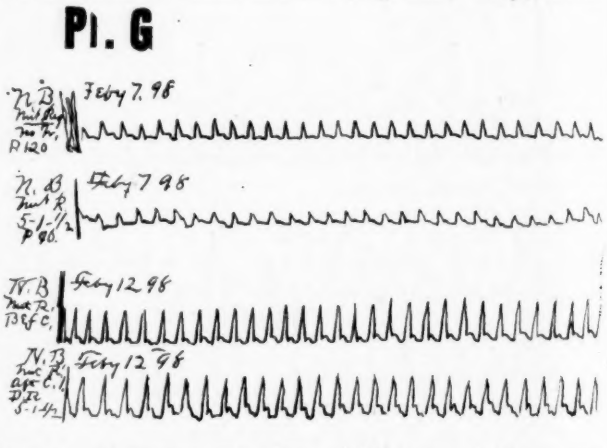
Further illustration of immediate tension reduction is given in the first set of Plate B⁴. Here the first tracing shows a very different condition of arterial tension before treatment, bordering on that of mitral regurgitation, and indicates relative arterial contraction and a weak or tired heart action. The immediate effect of treatment, shown in the second tracing, was to dilate the arteries, reducing arterial tension, whereby the systolic wave is accentuated and the unevenness of the ventricular force made apparent in the irregularity of the systolic wave. The full effect of treatment appears in the third, where the heart has again taken up the circulation. The recoil wave, entirely wanting in the first, now shows the firmness with which the ventricle completes the systole, and the arterial wave, carried higher with more uniform curve, shows, as does the lower systolic wave, the restoration of normal tension with a ventricle capable of meeting it.

The last two tracings give an instance of low tension and uneven systole before treatment with recovery of ventricular force manifest in the first tracing after coming from the cabinet, which means in most cases about five minutes.

The extent of the relief given the heart by twenty minutes' treatment, as manifested in restoration of functional power so plainly shown in these and other tracings, can be no greater surprise to others than it was to myself at first. It is made more believable when we recall that the heart muscle secures its nutrition during the brief periods of diastolic relaxation, and that in pneumatic differentiation both the systolic strain and diastolic stretching, the prime cause of dilatation, are entirely removed.

This patient has taken no drug for his heart during the past nine years, save that on a few occasions, when called upon to make a public address or plead a case before government officials, he has used small prophylactic doses of strophanthus or cactus, unless iron be considered a drug. The effect of pneumatic differentiation on the assimilation of iron, in this case alone, affords conclusive proof of the claims as to its influence on systemic nutrition. During the first seven years of his illness repeated attempts to take iron in daily doses of nine grains of Blaud's pill invariably resulted within two or three weeks in such severe headache as to compel their abandonment. Some three or four weeks after beginning treatment by pneumatic differentiation he started with the same amount (9 grains) daily, increas-

Pl. G



ing to 45 grains per day within two weeks. That amount he has taken for months at a time ever since. During the first few years he never omitted it for more than a week or two, and in all the nine years he has had but one recurrence of the headache, when he had taken this amount for some two months without any cabinet treatment.

We have already explained why the relief can not be as permanent in mitral regurgitation as in the aortic lesion. It is often, however, quite as immediate and decided and as gratefully appreciated by the right as the left ventricle.

CASE E.—Male, 35; uncomplicated mitral regurgitation of rheumatic origin. The tracings in this case (Plate E), by themselves neither suggest cardiac disease nor indicate any particular effect from the treatment. But the pulse rate of 116 and respiration of 30 on the first, tell the story of pulmonary oppression in a way that emphasizes the pulse of 88 and respiration of 24 on the second, a reduction of 28 in the pulse and 6 in respiration, as evidence of what pneumatic differentiation can do for mitral incompetency. Moreover, this reduction with its commensurate subjective relief, was not only maintained until the next treatment, although the patient came from a distance, but was slightly increased by subsequent treatment so that at the end of a month the patient

was considering the resumption of his business as a grocer, when a severe attack of acute rheumatism withdrew him from observation.

CASE G.—Male, 54, had also simple mitral incompetency, although for several years it had been called chronic bronchitis. This patient had suffered for many years from a slowly progressive dyspnea, yet was surprised to learn that he had any heart trouble.

In Case E the tracings show as perfect compensation as is possible with this lesion; but in Plate G the first pair indicate most plainly the stage of force failure, slowing circulation and secondary arterial contraction. The effect of the first treatment is apparent in the second tracing of the first pair only by a slight improvement in the arterial wave, but the reduction of pulse rate from 120 to 96 by this single treatment is quite as striking as in Case E.

Of the second pair, taken five days later, the first compared with the first of the other pair, measures the permanent results gained in this time, unquestionably through improved nutrition, while the second gives evidence in the arterial wave of a slight immediate effect upon tension.

To our mind these tracings from Cases E and G afford conclusive proof of the claims as to the effect of pneumatic differentiation in augmenting blood flow, and the relation of such increase to tissue nutrition and reflex arterial tension.

In summary, therefore, we claim to have shown:

1. From the physical standpoint, (a) that any agent which decreases vascular tension and coincidently maintains or increases nutrition throughout the entire system, and only such an agent, is an ideal therapeutic measure in organic cardiac disease; (b) that pneumatic differentiation lowers vascular tension, increases blood flow, and coincidently increases nutrition; (c) that it is applicable to the pathic conditions of valvular lesions.

2. Clinical results prove the accuracy of the foregoing propositions and establish the power of this measure to neutralize the injurious effects of organic cardiac disease more quickly, fully and permanently than can any other known agent.

ACUTE INTESTINAL OBSTRUCTION.

REPORT OF A RARE CASE OF PROBABLE SYPHILITIC ORIGIN.

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DENVER, COLO.

No graver condition to which the human subject occasionally falls a victim will ever confront the practitioner of medicine than acute intestinal obstruction. His resources, medical and surgical, will be taxed to their utmost. Should it be the reduction of an invagination, the untwisting of a volvulus, severing adhesive bands, intestinal resection and end-to-end anastomosis, enteroplasty or enterotomy, in fact resorting to any surgical procedure for the relief of the existing condition, the high mortality from all these essentially capital operations renders this subject one well worthy of our consideration.

The usual causes of obstruction in the alimentary canal, while familiar to us all, may with propriety be recalled, as follows: Impaction of fecal matter, foreign bodies in the canal, intussusception, volvulus, constriction by bands usually following a peritonitis, openings in the omentum or mesentery through which the intestine falls and becomes constricted, diverticula, neoplasms, stricture and hernia. Grund, Saurel, Soepp and Wyeth have reported cases of obstruction due to lumbricoid worms.

Obstruction due to fecal impaction usually gives the history of a tumor mass slowly appearing; on palpation the mass is freely movable and can be molded between the fingers, the cecum and colon are the usual sites of involvement; in this form of obstruction, the sigmoid flexure follows next in frequency. Obstruction of this type is not usually followed by morbid signs indicative of a serious condition—the vomiting, pain and tenderness on pressure. The accompanying shock so frequently seen in obstruction due to other causes is here usually absent, and if present at all in cases of an extreme degree it is usually one of the last symptoms to appear. This type of obstruction, as would naturally be supposed, is the most amenable to treatment and consequently the least dangerous.

Foreign bodies found in the intestinal tract excluding enteroliths, although they may be the nucleus for enterolith formation, usually gain entrance through the stomach. Dennis quotes the following facts from 51 autopsies: In 33 there was evidence that there had been or that there was a fistula established between the gall-bladder and the duodenum of sufficient size to allow the passage of the stone. In 3 cases the common bile duct had been dilated sufficiently large to admit a finger, there being no fistula present. In one case reported there was a gall-bladder stomach fistula, and in one a gall-bladder colon fistula.

The exact location of the impacted calculus has been determined in 83 cases, showing the lower ileum involved 50 times and the jejunum 13 times.

Intussusception or the telescoping of one portion of the bowel into another is usually met with in infancy.

Holt reported 385 cases under three years of age, 28 under four months, 113 between four and six months, 71 between seven and nine months, 18 between ten and twelve months, 32 between one and two years. 96 between two and ten years. Three-fourths of all the cases reported occurred in children during the first two years of life.

Bands of cicatricial tissue following an acute or chronic peritonitis are at times predisposing if not active etiologic factors in obstruction.

Hernia excepted, obstruction by cords and bands is the most frequent of all types; 35 per cent. of Leichtenstern's cases were of this type. Malignant growths, while they ultimately result in acute obstruction, are the most frequent cause of the so-called chronic type of obstruction. Columnar-celled carcinoma is pathologically the type of cancer met with; sarcoma, while uncommon, has been found in the small intestine.

Bessel Hagen reported a case of primary sarcoma involving the jejunum. Jalland reported a case of sarcoma of the small intestine; Modling collected 14 cases. Cancerous strictures are frequently situated at the sigmoid flexure, next in frequency at the ileo-cecal valve and rarely at the splenic and hepatic flexures.

Leichtenstern, in 1134 hospital cases excluding hernia and malignant diseases, has shown that one death in every three, or 500 cases, is due to intestinal obstruction in some form. Fagge in 4000 autopsies reports 54 deaths from intestinal obstruction.

True intestinal concretions, according to Leichtenstern, occur in less than 2 per cent. of cases; in 1153 cases of obstruction he found 41 caused by gallstones. Courvoisier reported 131 cases of obstruction from this

cause, Trever 30, and Wisnig 50. Dennis reported 149 cases of intestinal obstruction due to gallstones and enteroliths, of which 133 were the former and 16 the latter.

In the pre-anesthetic days the mortality in operation for the relief of intestinal obstruction is quoted at 75 per cent.; since the days of anesthesia Senn quotes the mortality at 58 per cent.

Curtis reported 328 cases operated since 1873 with a mortality of 68 per cent.; 101 cases were operated with the patient moribund. In 45 of Curtis' cases there was excision and suture with a mortality of 86 per cent.; in 190 cases in which the constriction was merely relieved he reported a mortality of 57 per cent.

The treatment, except in some cases of intussusception and of fecal impaction, is purely surgical and needs no discussion here.

From the somewhat extensive perusal of the literature I am unable to find any reports of cases similar to the one herewith presented, which occurred recently in my practice. The unexpected complication and the nonmalignant nature of the growth found at the sigmoid flexure make the case one of interest.

I was called in consultation with Dr. W. L. Keller, of the Army, to see Mrs. H., aged 31. She compained of pain and tenderness over entire abdomen; menstruation was profuse and irregular; nausea and vomiting present to a slight degree; temperature at time of first examination was 99, pulse small and with little tension.

On inspection the face presented a somewhat drawn and anxious expression; abdomen was slightly distended and tympanitic. On palpation a tumor mass the size of a child's head could be easily outlined, at a point corresponding to the fundus of the uterus. Vaginal examination revealed the presence of a mass occupying the pelvic outlet and well down in the vagina. Diagnosis: myomata of uterus. The patient was referred to hospital for operation, and Dr. W. A. Jayne, of Denver, was called in consultation. After 24 hours in the hospital the patient said that her bowels had not moved for six days, and that previous to this time her evacuations had been scanty. There was no previous history of diarrhea; cathartics were freely resorted to in our efforts to move the bowels. Thirty-six hours after entrance to the hospital the abdomen became markedly distended and tympanitic; colicy pain and tenderness existed over entire abdomen; nausea and vomiting now became a prominent symptom and the vomiting so pronounced that everything taken into stomach was rejected. Repeated high enemas failed to move bowels.

The diagnosis of complete obstruction was made and the patient operated on by Dr. Jayne and myself. Median abdominal incision was made. The intestines were enormously distended with gas, and only after numerous punctures to eliminate the gas could they be manipulated. A thin serous fluid escaped from the peritoneal cavity, the walls of the intestines were acutely inflamed and there was every evidence of a beginning peritonitis. The myoma of the uterus was plainly visible. At the site of the sigmoid there was a mass about 3¼x2 inches, which involved the gut and produced complete occlusion of its lumen.

The tumor was with difficulty resected, owing to the extensive adhesions to surrounding structures. End-to-end anastomosis performed by means of Murphy's button; the abdomen was then closed in the usual manner. Forty-eight hours after operation the patient died; postmortem examination revealed the presence of a leak at the site of button.

The pathological examination of specimen as given by Dr. Wilder, pathologist to St. Luke's Hospital, is as follows: Sections made from the tumor of sigmoid flexure, which was submitted for examination, show the growth to consist entirely of a mass of rather dense fibrous tissue containing a few blood vessels. The latter having well developed walls. I find no evidence of either tubercle or of malignant changes.

MODIFIED TREATMENT OF TYPHOID FEVER.

T. B. GREENLEY, M.D.
MEADOW LAWN, KY.

The treatment of typhoid fever might be termed a hackneyed subject, but as it is a prevalent disease in many sections of the country, and there seems to be no settled mode of treatment, I regarded myself at liberty to try something new in its management. As it is usually a protracted disease, anything that we can use safely in its treatment, by which its extent can be shortened, I regard as legitimate.

Some say: Treat the patient instead of the disease, while others say: Watch and treat symptoms as they arise; others again contend that diet is the main thing in its control. I am of the opinion that we must, to some extent, pay attention to all these considerations, and at the same time not neglect the mind and pleasant surroundings.

As far as I am individually concerned, I have had but few cases of the disease coming under my control for several years. The plan of treatment I have recently adopted, as it pertains to therapeutics, has been confined to only some three cases of recent occurrence. The first and third of these cases were very short in duration, only continuing eight days from the time I first saw them. The third patient had been complaining about a week, and his father, thinking he had malaria, had given him quinin and laxatives. The second case was of longer duration, partly due to neglect in the way of nursing as well as diet. When called to see this patient I found him alone in his room, and had to get some of the neighbors to attend him and give the medicine. He had poor attention during his illness.

In these cases, when the fever was above 102 F., I increased the quantity of medicine, say one grain each of quinin and acetanilid, but did not shorten the intervals; but when the patient was asleep and resting quietly, I prolonged the intervals of giving the medicine. I regard rest, quietude and sleep of great advantage in the treatment of typhoid fever. This is why I dislike the Woodbridge plan of frequent doses.

Should the temperature resist antipyretic effects of the medicine I have the surface sponged with tepid water, which is quite soothing to the patient and keeps the skin in good condition. It is more convenient and more pleasant than the cold bath.

It has been a rule with me for many years, in the treatment of typhoid fever, to administer small doses of turpentine in cases troubled with tympanites. It not only relieves the tension of the bowels by expelling the gas, but acts as an antiseptic. I have had little trouble with diarrhea in this disease for years, and entertain the opinion that turpentine acts as a preventive. Another benefit we may derive from the use of turpentine is its prophylactic action against hemorrhage, either from the nose or bowels.

I am greatly in favor of milk, given as patients call for it, but in some cases it may be necessary to urge them to take it. I also allow them to have oatmeal mush, with sugar and cream, several times a day. Now and then we find a patient who dislikes sweet milk, but prefers buttermilk, freshly churned. I find no objections to the latter, as it contains the same elements as the sweet milk that has been skimmed; they both contain the fat and musele-making principles, namely, hydrocarbon and casein. Should sweet milk curd on the stomach, a little soda or lime water will prevent it.

Milk may, by way of change, be alternated with soups of different kinds. It is very essential, in the

convalescent stage of the disease, to watch the patient, both as to diet and muscular over-exertion. I have lost some three patients from imprudence in these particulars after they were dismissed.

One reason why I think quinin a proper remedy in the present type of typhoid fever is the fact that it occurs during the malarial season of the year. When I commenced the practice of medicine in 1845, and up to 1875 I only met with winter and spring typhoid, and did not think it necessary to give quinin. The first case of summer or fall typhoid I ever saw was in the fall of 1875, when I had an introduction to it of six cases at the same house. They fortunately all recovered. The old-time winter typhoid was generally attended with symptomatic eruption. We also expected a week or ten days of what is called the nervous stage.

In the fall and summer typhoid fever, we usually find the pulse much slower than it was in the old winter typhoid, as well as in remittent fever. This is one of the distinctive characteristics of identity between the summer or fall typhoid and the latter disease.

My reason for the use of acetanilid with quinin is that it has a soothing and quieting effect and prevents the possible irritating effects of the latter on the nervous system. It also, to some extent, acts as an antipyretic. I have not observed any depressing effects of acetanilid on the heart. It is always well to increase or diminish the dose according to amount of temperature.

MEDICATION OF THE RESPIRATORY TRACT BY ANTISEPTIC NEBULÆ.

HOMER M. THOMAS, A.M., M.D.
CHICAGO.

The antiseptic value of nebulæ in the treatment of diseases of the respiratory tract is well recognized by the profession. How to administer them in sufficient strength and quantity to control respiratory septic processes has been the problem. If administered by the stomach in suitable strength and quantity to sufficiently saturate the lungs, as a rule the stomach and lower alimentary tract is so irritated that digestive functions are greatly deranged, hence Nature's method of controlling these processes by vital resistance is much impaired; if introduced directly into the lungs by a parenchymatous injection, so much irritation is produced that an exudate is thrown out which occludes the finer air passages and prevents the introduction of the medicaments; therefore, the normal method of reaching these septic processes is by combining in a respirable form antiseptic nebulæ.

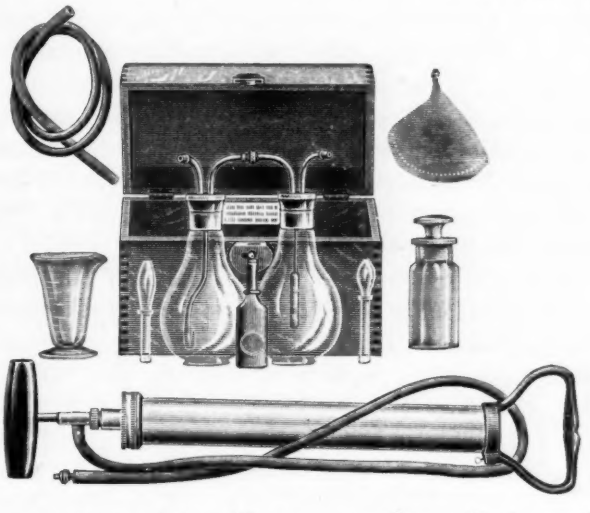
There are many mechanical methods for the introduction of antiseptic nebulæ into the respiratory passages. These vary from the single hand-bulb nebulizer on up to the elaborate mechanisms found in the efficiently equipped offices of the modern medical men. The problem in this form of treatment has been to provide an efficient mechanism for home treatment by patients. For, with the thorough measures of treatment instituted in our offices to be supplemented by the patient's home use of remedies under the guidance of the physician is to reach the most effective results from this form of treatment.

In this connection I may state that I have found a new device, Benson's Home Nebulizer, very satisfactory for the individual use of patients. The accompanying cut makes any extended description unnecessary. This apparatus is compact, portable, inexpensive, and of considerable capacity for complete lung inflation. Its practically steady current of compressed air is filtered and antisepticized before performing its nebulizing duties proper.

As to the formulæ valuable for use in antiseptic nebulæ, the experience of the physician as to the specific case must necessarily be determined largely by his own judgment.

My personal preference has been in favor of simpler rather than complex mixtures. I seldom combine more than one antiseptic in a given mixture. The best vehicle with which to combine an antiseptic is the commercial preparations of the liquid hydrocarbons. In a 4-ounce mixture of oleum petrolati I frequently add 30 drops of the chemically pure oil of wintergreen, for use in cases of slight catarrhal bronchitis. Merck's oil of cloves in the proportion of 40 drops to 4 ounces of the vehicle is very useful in cases of subacute bronchitis. One of the most delightful as well as soothing nebulæ consists of the imported chemically pure oil of pine needles in the proportion of 50 drops to 4 ounces of the vehicle where there exists acute catarrhal coryza of the respiratory tract.

The above will readily suggest to the physician the general scope and character of the large number of remedial agencies from which to choose. Formulæ containing cocain muriate with gum camphor will do much toward allaying the discomfort in tonsillitis. Mixtures can be made up containing iodin crystals, beechwood creosote and oil of tar for laryngeal and pulmonary tuberculosis, and so on through the wide range of efficient antiseptics at our command. I believe the chances of successfully coping with respiratory disease are greatly enhanced by general adoption of the inhalation method.



Trauma in the Etiology of Infectious Cerebral Affections.—Ehrnrooth of Helsingfors had occasion to treat two cases of infectious brain affections which developed consecutive to a contusion of the skull, without solution of continuity. He produced a similar contusion on the skulls of 167 rabbits, and inoculated 90 with streptococci, 16 with staphylococci and 11 with pneumococci. More than 63 per cent. of those inoculated with the pneumococci, 56 of those inoculated with staphylococci and 54 per cent. of those inoculated with streptococci died with evidences of an infectious process in the brain. Of the 50 animals infected, but without trauma, only 9 showed traces of an infectious process in the brain. The contusion therefore must have afforded a favorable place for the colonization of the bacteria in the blood, even in the absence of any lesion of the skin or meninges.—*Nord. Med. Ark.*, February 6, 1902.

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SYMPTOMATOLOGY OF LESIONS OF THE PREFRONTAL LOBE.

The diagnosis of tumor of the brain may be easy or difficult, in accordance with the situation and the mode of growth of the neoplasm. The difficulties are greatest when it is situated in the so-called silent or latent areas of the brain, but invasion even of these often gives rise, as increasing experience is showing, to characteristic symptoms, whose significance we are only beginning to appreciate. This is particularly true of the prefrontal lobe, lesions of which, while usually unattended with motor manifestations, give rise to peculiar mental disturbances. These consist in loss of self-control and a subsequent change in character, with errors in judgment and reasoning. There is inability to fix the attention, to follow a continuous train of thought or to conduct intellectual processes. Sometimes also the gait is staggering, like that of cerebellar disease.

A case illustrating the localizing value of the symptom-complex under consideration and in which operation was successfully undertaken by reason of the correctness of the diagnosis is recorded by Drs. William Elder and Alex Miles.[1] The patient was a man, 47 years old, who five months before the coming under observation began to suffer from pain, at first in the back of the head, but soon afterward referred to the left frontal region, where it subsequently remained localized. Early in the illness the left side of the forehead and face became swollen to such an extent as to close the left eye and during the continuance of this swelling the pain in the head was lessened. After about four weeks, while the patient was taking some medicine, probably potassium iodid, the swelling began to disappear gradually. Vomiting of cerebral type—without relation to food or other apparent cause—took place occasionally.

In the further progress of the case the patient became depressed, refused to leave his bed and would not speak to his wife. He sometimes refused to take food, although his appetite appeared to be normal. His memory became impaired, especially for recent events. He became unduly emotional and wept on slight provocation. He seemed to lose all sense of decency and shame, exposing his person unduly and needlessly. He suffered from incontinence of urine and later also from rectal incontinence, not apparently because of weakness of the sphincters, but from a loss of the sense of propriety. At times he failed to recognize his surroundings. There was now marked pain in the left frontal region and a swelling appeared over the left frontal eminence.

On admission to the hospital the man was found to be sleepy, dull and apathetic, and he could be roused only with difficulty by pricking or shaking or a sharp question. When awakened, he yawned frequently. Hearing seemed to be normal. Responses to questions were correctly expressed, but were made more slowly than normal. The patient was unable to sustain his attention for any length of time. Lack of judgment was a marked feature of the mental condition. There was no aphasia, but a slight degree of dysarthria. There was slight paresis of the lower part of the right side of the face and the right upper extremity. The plantar and patellar reflexes were preserved, but not exaggerated, although there was ankle clonus. The man walked without difficulty, and co-ordination appeared preserved, although the wife stated that he staggered on suddenly getting up out of bed, but he did not complain of giddiness. There was for a time no pain in the left frontal region unless the skull were percussed, but later tenderness on pressure was appreciable over the small round swelling in this situation, which evidently arose from the bone and was soft at the center. In the right frontal region was a small depressed cicatrix resulting from an abscess that had been opened three years previously and had followed a blow in that situation four years earlier. Examination of the blood disclosed a slight reduction in the number of red corpuscles and in the percentage of hemoglobin, but no increase in the number of leucocytes. The left eye had been disorganized by smallpox and vision in it was completely wanting. In the right eye vision was still good, and the pupil was slightly contracted, although it reacted to light. On ophthalmoscopic examination the fundus of this eye exhibited some blurring of the edges of the disc, with some dilatation of the veins. No history of syphilis could be obtained, although the wife had had three miscarriages and had borne four living children.

The condition of the patient grew progressively worse, despite active treatment with mercury and iodin. The presence of a new growth being suspected, operation was undertaken. A small area of caries was found on the surface of the left frontal eminence, which was separated from the scalp by cheesy débris. On introducing a finger, after removal of a disc of bone and incising the dura mater, a firm nodular mass was detected occupying the tip of the frontal lobe. This proved to be a definitely circumscribed tumor, with a thin covering of cortex. It was easily shelled out, without causing hemorrhage, and the cavity left was immediately filled by bulging brain-tissue. The wound was closed and the patient progressed to speedy recovery. The growth presented the histologic structure of a syphiloma.

This case is an admirable illustration of the precision in diagnosis that can be attained by careful study of

1. Lancet, February 8, p. 363.

symptoms and history and of the successful results that can be accomplished by prompt and intelligent surgical intervention. The number of cases in which a like result has been obtained is not large, principally because even when a new-growth is correctly diagnosed and located it is often so situated as to be insusceptible of removal.

ARSENIC AS A NORMAL CONSTITUENT OF TISSUES.

Gautier's discovery that minute quantities of arsenic can be detected in perfectly normal tissues of human beings who have not taken arsenic knowingly, has attracted much attention, especially because of the short time that had elapsed since Baumann's discovery of iodin in the thyroid. The interesting deductions that Gautier made, also did much to arrest attention. Briefly, Gautier's[1] results were as follows: By using 100 grams or more of the substance to be tested minute quantities of arsenic could be detected in many tissues. The thyroid gland contained the most, about 0.75 milligram per 100 grams. Next to that came the mammary gland, with 0.13 mg. The brain contains variable quantities, usually more than the thymus, which in turn contains more than the skin and its appendages in which traces are constant. A great many other tissues that were examined showed no arsenic, among which was the hypophysis, strangely enough considering its relation to the thyroid. This arsenic seemed to exist along with iodin in the nucleo-proteid of the thyroid; perhaps substituted for phosphorus in this proteid.

There is so little arsenic in the tissues that it is not of medicolegal importance, especially since it could not be found in the large organs that generally are examined. Even if decomposition should cause the arsenic of the thyroid and skin to be dispersed throughout the body the amount would still be too small to be detected.

But most interesting of all Gautier's results, was the finding of a considerable amount of arsenic in menstrual blood. An average of 0.28 mg. of arsenic was found per kilogram of blood, from five healthy women. Gautier points to the fact that the total amount of arsenic eliminated in this way corresponds quite closely to the amount he found in the normal thyroid. This led to an examination of menstrual blood by Bourcet for iodin, which he found present in the proportion of 0.90 mg. per kilogram, whereas normal blood contains but .025 mg. The evident relation between the thyroid and sexual functions being well known, Gautier considers these findings as corroborative of his assumption of a relation between iodin proteid and arsenic proteid. The great loss of arsenic that thus occurs monthly led him into remarkable channels of speculation. He had found no arsenic in the ordinary excretions, although it was obviously being ingested both in proteid foods and also in certain vegetables which have been shown to contain this element. Therefore, he concluded that the normal channel of elimination was by the desquamation of the superficial epidermis and the loss of dermal appendages. By a characteristically Gallic flitting into comparative anatomy, physiology and psychology he arrives at these striking conclusions: Arsenic nucleo-proteid ordinarily goes to supply material and stimulus for growth of the skin and its appendages. In the female during menstruation it is diverted to the organs of generation where it provides for the development of fetal tissues if impregnation has occurred, or else is cast off in the menstrual blood. It is because of this disposal of the arsenic that in the female the hair ceases to be produced after puberty. The male not losing his arsenic in this way continues to grow hair, and removes his arsenic by cutting the hair, shaving, and desquamating! He cites instances among lower animals in which the hair or feathers or corresponding dermal growths increase until the season of rut, then the arsenic being diverted to the generative organs the nourishment of these appendages is lowered and they are cast off, or molted.

In fact, Gautier's train of logic is so pleasing, his comparisons so apt, that it is with a feeling akin to regret that one learns that Cerny,[2] who has repeated part of Gautier's work, has failed to corroborate it completely. Cerny found only most minute traces of arsenic, at most .01 mg. per kilogram, in the thyroid, and that not constantly. Furthermore, he found almost as much in the liver, where Gautier did not find any. He states that the presence of these minimal amounts of arsenic is not surprising, in view of the wide distribution of arsenic in nature, and the general use of arsenic in the industries. He concludes that the amount of arsenic is too small and too inconstant to play any physiologic rôle, and is at a loss to explain the differences between his results and those of the French observer.

ETIOLOGY OF CARCINOMA.

Fuetterer deals interestingly, in an original article in this issue, with one phase of the cancer question, namely, the frequency with which benign ulcers of the stomach are transformed into carcinomata. Moreover, he believes that such change may take place in small and recent ulcers as well as in large chronic ones, and cites instances. Furthermore, he thinks that the degenerative changes first occur in the edges of the ulcer, rather than at its base. There is no doubt, as he says, that the constant irritation to which gastric ulcers are exposed, especially those near the pylorus, strongly predisposes them to undergo malignant degeneration. This is an important statement, and is undoubtedly true; since, according to the best authorities, practically three-fourths of all gastric ulcers are at or near the pylorus, occupying the constricted segment of the stomach rather than its expanded portion, or larger segment. So careful a man as Hauser estimated that 6 per cent. of gastric ulcers ultimately became carcinomata, and many others have taken a far more pessi-

1 Comptes Rendus, Académie des Sciences, Tome 129, 130, 131.

2. Zeit. f. Physiol. Chemie, 1902, xxxiv, 408.

mistic view of the possibilities; Doyen, for instance. Even the optimistic Leube maintains that if medical treatment of gastric ulcer has failed after four or five weeks' trial, it is not likely to be successful. Kocher agrees with this opinion, and therefore rightly insists, from the surgeon's standpoint, that such cases should be promptly operated on. Chronicity, especially in those past 40, is to be looked upon with suspicion, for it may indicate incipient carcinoma. Now, that gastric ulcer is generally regarded as a disease that may be operable on account of adhesions, hemorrhage, perforation, cancerous change, etc., more accurate information concerning it will soon be forthcoming. There can, however, be little doubt that the stomach is sharing in the gain made by carcinoma in its encroachments upon all organs and portions of the body. It has fortunately been shown by Mayo Robson, William Mayo, W. W. Keen, and others, that the stomach is very tolerant of operative interference, and is an especially inviting field to surgeons. The cases reported and collected by Fuetterer call attention to this fact, perhaps the most important one in connection with gastric ulcer, that chronicity or failure to heal promptly, under suitable medical treatment, should be met by consultation with a modern surgeon fully alive to the possibilities of judicious surgery. Partial gastrectomy is a comparatively safe procedure, as was shown by Rodman, who collected all such cases operated on prior to 1900 and reported them in a paper read before the American Surgical Association at Washington. Eighty-five per cent. of pylorectomies, partial gastrectomies or excisions recovered fully. If we exclude cases operated on prior to the past decennium—before the perfection of aseptic technique—the mortality is materially lessened.

That gastric ulcers not infrequently undergo malignancy, is additional evidence in support of the theory of mechanical irritation, so largely adopted by authors as the chief etiological factor in producing carcinoma. It will be found that throughout the gastro-intestinal tract that points of constriction, irritation or both, as the lips, tongue, esophagus, cardia, pylorus, ileocecal valve, appendix and rectum, most frequently suffer from carcinomata. Such is also true of the external parts and organs, as the mammary gland, penis, scrotum of chimney sweeps, and arms of workers in paraffin. Such a cause may, it is true, only pave the way and prepare the soil for a germ which comes later, and finds tissues with their normal physiological resistance diminished, as is maintained by the adherents to the germ theory of carcinoma. There is much in the life history of carcinoma, its encroachments racial and geographic, its persistence in certain districts, localities, even certain houses, to strongly suggest a probable germ as its cause. Attractive as the theory of the parasitic origin of cancer is, it can not be said in fairness that a majority of authors or careful observers accept such teaching. The work of Gaylord and others, though commendable, is not conclusive.

While fully agreeing with Fuetterer and others who maintain that gastric ulcers undergo malignant transformation in a certain if not a large percentage of cases, still it is easy to be mistaken, and, therefore, one can not always conclude that a condition of malignancy exists because there are found adhesions, enlarged lymphatic glands, etc., at the time of operation. So good a man as Bidwell twice made such a mistake; thinking his cases cancerous he performed gastro-enterostomy as a palliative procedure and was surprised to find that both cases recovered fully and abidingly, the enlarged glands being evidently inflammatory in character. A large percentage of the cases of gastric ulcer thus far excised presented a condition closely resembling malignant disease. In separating adhesions, for instance, such surgeons as Billroth, Hofmeister, Klausner and Krogius have torn into the stomach, so great were the difficulties.

SOME INTERESTING QUESTIONS IN MALARIA.

The problems of malaria are not yet all solved by the recent advances in our knowledge regarding it. We know the parasite and in a general way its life history, and more important still we know how it is introduced into the human organism and how to avoid it. There are still, however, the puzzling facts of immunity and other questions that require solution. A suggestive article[1] has recently appeared from the pen of Dr. A. F. A. King, who it will be remembered was one of the earliest advocates of the theory of the agency of the mosquito in the transmission of malaria. In this recent paper he adduces facts that seem to him to indicate that the growth of the plasmodium in the blood is influenced by light. Among these are the infrequency of malarial paroxysms in the night hours, the relative immunity of the dark-skinned races, the favoring influence of bright sunny weather as opposed to cloudy weather on the occurrence of the attacks, the popular notion that shade prevents the attacks, and the fact that red light stimulates amebic growth, and that light transmitted through the blood must necessarily be red. The therapeutic suggestions, based on these ideas, are the keeping malarial patients in the dark, or deprived of red light; the use of white clothing with opaque black or purple linings, in the tropics, and the employment of drugs that darken the blood or lessen its translucency. If the rays from the violet end of the spectrum inhibit the growth and propagation of the malarial parasite, the use of Prussian blue (an old remedy) and more lately of methylene blue is explainable. Dr. King suggests that the fluorescent action of quinin intensifying the violet may explain its hitherto enigmatical specific action in malaria. Another vegetable product having this property is esculin and this has also been successfully employed as an antiperiodic. The paper is ingenious and suggestive rather than conclusive, but it deserves a place in the literature of malaria. Possibly the line of investigation it points out may be a profitable one and may add something of value to our knowledge of the pathologic conditions of malaria as well as to the resources for their prevention.

1. Am. Jour. Med. Sciences, February, 1902, p. 221.

DANGER OF INFECTION FROM CIGAR-CLIPPERS.

In these days of general microbiphobia, new perils to health and life are constantly unfolding themselves before our troubled visions. Some of these as given out are without question exaggerated and comparatively negligible; others, however, are worthy of some attention. The dangers from certain methods sometimes employed by cigar-makers were recognized long ago, even before the popular fear of germs had been aroused. The latest danger from this source is indicated, according to the newspapers, in a warning of the Chicago Board of Health, which pronounces the "mechanical cigar-clippers" in general use where cigars are sold a menace to the health of the community. It is a common practice for a smoker to moisten the tip of his cigar with saliva before inserting it into the clipping machine; he thus leaves whatever pathogenic germs his mouth can convey to infect the next comer. A continual series of such procedures can, it is easily imagined, make these little conveniences excessively dangerous disease-promoters. The most obvious and serious peril would, of course, be from venereal disease. A saloon frequenter with his mouth well supplied with mucous patches could be readily conceived to be a very effective disseminator of his disease, and without doubt some of the cases of extra-genital syphilis have originated in this way. There is a still further danger to be considered; the infected clippings are not thrown away or destroyed, but serve, at least in many cases, to meet the demand for tobacco in some other form, as cigaret or snuff material, which are other agents for spreading infection. Our pleasant vices are our scourges often enough, and it would be well that the malign possibilities of even the comparatively innocent habit of tobacco indulgence should be known and so far as possible avoided. If smokers would only employ their own clippers, even the primitive ones furnished by nature, they would escape at least one possible peril of the present day.

OCULAR DEFECTS AND HEADACHE.

Ophthalmologists probably sometimes magnify the effects produced by ocular errors of refraction, but it is certainly true that such refractive defects are responsible for a large proportion of headaches and for other reflex disturbances. In a recent article[1] George S. Hall of California states that very many of the neurasthenics who go across the continent in search of health have errors of refraction, which are the largest factor in their breakdowns, and he finds that a pair of spectacles often does what the climate will not for such persons. He also insists upon the deleterious effects of such defective eyes upon the general health of tuberculous patients. In opening the discussion upon headaches and their treatment at the 67th annual meeting of the British Medical Association, Lauder Brunton[2] said: "In all cases of headache the first thing to do is to examine the the teeth and see if any are decayed; next the eyes and see if there be any abnormality in them. The most common cause of headache is certainly some abnormality in the eyes." He considers two factors to be active in the production of headache: 1, a general condition with disordered or imperfect nutrition; 2, a local condition. The former condition renders the person liable to pain, the latter determines the location of the pain, and this determining factor is most often decayed teeth or defective eyes. In neurasthenic patients the general conditions are such that headaches may result from errors of refraction which in health would have caused no trouble. Such a headache, once established, may in itself further disturb the nervous equilibrium of the patient. In this class of cases the good effects of properly adjusted glasses, by relieving the patient of a disagreeable symptom, may be very great. This "ocular headache" must not be confused with the "neurasthenic headache," which is possibly toxic in origin and continues after every source of peripheral irritation has been removed. Neurasthenic headache is very intractable to treatment by drugs and a suitable climatic condition is of much value in bringing about a cure. In tuberculous patients ocular headaches may have a bad influence upon the general condition. The pain and discomfort bring about a depressed mental condition and there follows loss of appetite and indisposition to go out of doors with resulting bad effect upon the general health. A routine examination of the eyes of all neurasthenic patients is to be recommended, and in cases of chronic disease where ocular defects may be the cause of headache and other disturbances which have an unfavorable influence upon the patients, the possibility of learning something by the examination of the eyes which may be of value should not be forgotten.

1. The Ophthalmic Record, January, 1902, 27.
2. British Medical Journal, Nov. 4, 1899, 1241.

HOSPITALS FOR THE INSANE.

As the gloom of ignorance surrounding the nature of insanity has been gradually dissipated by the light of accumulating knowledge, more rational methods of treatment have found their way into practice. Insanity is no longer looked upon as a supernatural visitation, from which there is no escape and for which there is no preventive or remedy, but rather as a morbid state comparable to other disordered conditions of the body, having similar underlying causes and therefore amenable to analogous therapeutic measures. It is this modern scientific view that is responsible for the improvements in the treatment of the insane witnessed during the latter half of the century just ended. No longer is it deemed necessary to incarcerate such a patient and condemn him to a life of hopeless isolation and inactivity. Far more is to be gained, as a constantly increasing experience teaches, by placing him amid congenial surroundings, with only such restraint as to protect him from harm; by ministering to his wants in the same way as those of one ill from any other disease are attended to; and so soon as he is convalescent, by encouraging him to take such exercise and engage in such pursuits as are likely to contribute most to his well-being and increase his usefulness. In the same spirit the designation "Hospital for the Insane" has gradually replaced that of "Asylum," and a step further in progress in this direction has been taken by the board of trustees of the Butler Hospital at Providence, R. I., who, upon the suggestion of their far-seeing phy-

sician and superintendent, Dr. G. Alden Blumer, have decided to eliminate wholly from their official title the words "for the insane." As is properly pointed out in the last report of the hospital just issued, although the institution is devoted to the treatment of one special form of disease, this is not so distinct from other forms, either in etiology or in symptomatology, as is ordinarily believed. The institution aims to be truly a hospital and not merely a place of confinement or detention for irresponsible persons. There still exists among many people a notion that there is attached to those who are so unfortunate as to suffer from insanity some stigma that is accentuated by residence and treatment in a hospital, just as there lingers in some remote quarters a prejudice toward hospitals in general. The enlightened action of the trustees of the Butler Hospital can not be too highly commended and is deserving of general imitation. This would go far to correct the false views that exist in this connection and would give an impetus to the institutional treatment of cases of the kind at the earliest possible moment, for it must be admitted that, while in the abstract, there may be reasons why it would be desirable to conduct the treatment at home, few families can provide the facilities and the resources that are at command in a well equipped hospital.

Medical News.

ILLINOIS.

Dr. Shepard Promoted.—Dr. John L. Shepard, of Illinois, acting assistant surgeon, U. S. Army, has been made first lieutenant and assistant surgeon in the regular establishment.

Jacksonville Physicians Deplore Fenger's Death.—At a recent meeting of the Jacksonville Physicians' Club the following resolution was passed: Resolved, That, in the death of Dr. Christian Fenger, of Chicago, the medical profession has lost a member whom it delighted to honor; one whose work, like his life, was confined to no one land or tongue, but was as cosmopolitan as the fraternity he honored with his name; a great surgeon, pathologist and teacher; one of whom it might fittingly be written: *Doctores docuit.*

Disagreement in Marshall Case.—It looks as if Dr. James A. Marshall were to be made a political scapegoat. After a long trial, the board of managers of the Illinois State Reformatory, Pontiac, has passed the following resolutions:

WHEREAS, The board of managers of the Illinois State Reformatory as now constituted is unable to agree on a verdict in the matter of the investigation of the charges against Dr. James A. Marshall, and

WHEREAS, There is a vacancy existing on said board; therefore, be it

Resolved, That the president of said board be authorized to cite the said Dr. Marshall to a new hearing, and further

Resolved, That it is the desire of the board that the governor fill said vacancy.

Chicago.

Prevalence of Pneumonia.—Laboratory examinations show increasing numbers of the pneumococcus, and there is reason to apprehend another increase of this disease.

The Hospital of the Holy Family of Nazareth has given a trust deed to secure a loan of $50,000 for five years. The building is nearing completion and will have cost, when completed, about $400,000.

Honor for Dr. Murphy.—The Laetare medal, the highest honor in the gift of the University of Notre Dame and perhaps the most highly-prized honor that can be attained by a Catholic layman in America, has been conferred this year on Dr. John B. Murphy, of Chicago, in recognition of his merit as a Christian gentleman and his great work in medical science.

Hospital for Women.—The lay press announces that at a meeting of the alumnæ of the Northwestern University Woman's Medical School, it was decided to establish a hospital to perpetuate the memory of the school. The new hospital will be entirely under the management of alumnæ of the school. It is stated that no man can enter this hospital except as guest, janitor or patient. Among those who are taking an active part in the planning of the new hospital are Drs. Sarah Hackett Stevenson, Eliza H. Root, Effa V. Davis and Mary J. Kearsley.

Last Week's Mortality.—Last week's death rate, says the Health Department Bulletin, fell to nearly the normal for the season of the year. The 514 deaths recorded—120 fewer than during the previous week—furnish an annual rate of 14.72 per 1000, instead of 18.15 of the week ended March 1. This is a decrease of 18.8 per cent. and is only 4 per cent. higher than that of the corresponding week of last year. Except diphtheria, all the principal causes of death show a marked reduction. There is a 12.5 per cent. increase of diphtheria mortality since February 1 over the January mortality this year, and the commissioner is making increased effort to secure the prompt and more general use of the diphtheria antitoxin on this account.

MARYLAND.

Vital Statistics.—For the week ended March 8 the deaths in Baltimore were only 192 against 230 the previous week. Pneumonia caused 21 and consumption 23 deaths. The births were 356, the disproportion being accounted for by the fact that most physicians report births only at the end of the month.

For Cambridge Hospitals.—A delegation of citizens from Dorchester and other counties of the eastern shore is asking for the Cambridge Hospital an appropriation of $4000 a year, and also an additional appropriation of $5000 to be used in conjunction with a similar amount which has been agreed on by the County Commissioners, for the construction of a new building.

Appropriations for Medical Colleges.—A bill has been introduced in the legislature appropriating $15,000 annually for two years to be equally divided between the Baltimore Medical College, the University of Maryland and the College of Physicians and Surgeons. The Board of State Aid and Charities has strongly advised against such appropriations, and a fight over it is in prospect.

Baltimore.

Personals.—Dr. Wilham Lee Howard will go abroad in May and spend most of the summer in Portugal.——Dr. Frank W. Smith has resigned as resident physician of the Hebrew Hospital and will enter in practice in Highlandtown, a water suburb of Baltimore.——Dr. Edward M. Schindel has been unanimously nominated for a third term for mayor of Hagerstown by the Democratic city convention.——Dr. Robert H. Goldsmith, president of the Alumni Association of the University of Maryland, celebrated, on March 9, the semi-centennial of his graduation in medicine.

Frick Library.—The Report of the Frick Library of the medical and chirurgical faculty shows 1936 volumes in the collection. A large proportion of these are standard works and important recent monographs on medicine and the allied specialties. Particular care has been taken to keep up to date the section on urinary diseases in which Dr. Charles Frick was so greatly interested. The special collection of works on biography and on the history of medicine has been much appreciated; 243 volumes were added during the year; 100 volumes of rare old books were purchased by Dr. Osler in Amsterdam and Edinburgh and presented to the library. There were 3771 readers in the room, and 1898 volumes were borrowed for home use. A case has been purchased to hold the books which were in the personal library of Dr. Frick, and this has been placed below his memorial tablet. Subscriptions were received as follows during the year: Mr. W. F. Frick, $500; Dr. William Osler, $200; Mr. Frank Frick, $50.

MISSOURI.

Crossland Banquet.—A banquet is to be given Dr. John R. A. Crossland, St. Joseph, who will soon leave for Liberia.

Physicians Dined.—The St. Louis Medical Society entertained Drs. William T. Corlett of Cleveland and Dr. Alembert W. Brayton of Indianapolis at dinner, March 1. After dinner these gentlemen addressed the Society on "Smallpox."

Gregory Testimonial Banquet.—Arrangements are being rapidly completed for the Gregory banquet to be held in St. Louis on April 17. Governor Dockery, of Missouri, who is a physician and a student of Dr. Gregory, will preside over the banquet. Every indication points to a large attendance.

Central Medical College, St. Joseph, held its commencement exercises, March 1, graduating a class of ten, including two

women. The faculty address was delivered by Dr. W. L. Kenney; the address to the graduates by Hon. Benjamin J. Casteel, and the degrees were conferred by Dr. Moritz F. Weymann.

NEW YORK.

Fifty Years in Suffern.—Dr. A. S. Zabriskie, on March 5, completed his fiftieth year as a practicing physician in Suffern. Dr. Zabriskie is 82 years old.

The John Hodge Memorial Hospital, erected in Lockport by the widow at a cost of $10,000, has been formally turned over to the Home of the Friendless Association.

The District Nurses of Buffalo have received authority from the Health Commissioners and Common Council to act gratuitously as sanitary inspectors. As they visit the poorer districts much good is expected to be derived from their observations.

The annual meeting of the Erie County Medical Association was held March 10. Dr. De Lancey Rochester, the retiring president, delivered an address, and Dr. Allen Jones read a paper on the "Differential Diagnosis Between Dilated Gall-Bladder and Floating Kidney."

Investigations of Charges.—Charges of high death rate in infants under 2 years of age were made against the St. Mary's Infant Asylum of Buffalo by Dr. Julius Pohlman. Mr. George Lewis, as legal representative of the sisters, having invited the Buffalo Academy of Medicine, the Charity Organization Society and the Department of Health to appoint an investigation committee, the Academy has accordingly appointed Dr. Henry R. Hopkins, president of the State Medical Society; Dr. Ernest Wende, Dr. William Warren Potter, president State Board of Medical Examiners, Dr. Thomas F. Dwyer and Dr. Francis E. Fronczak as such committee. The committee is to report its findings as soon as possible.

State Hospital Managers Retained.—Governor Odell indicated clearly by some appointments he made, March 6, his intention to retain in the service of the state as many as possible of the former managers of the state hospitals for the insane, who were legislated out of office by a recent act. The appointments were those of members of the boards of visitation for the Utica State Hospital, the Hudson River State Hospital and the Binghamton State Hospital. Five persons were appointed as members of a board of visitation for each one of the three hospitals named. Thus fifteen appointments were made, and only one of these new appointments was that of a person not hitherto a manager.

New York City.

Private Smallpox Hospitals.—Commissioner Lederle has already received two offers of $50,000 toward building private smallpox hospitals.

To Reduce Mortgage.—The Medical Society of Kings County is making strenuous efforts to reduce the mortgage of $33,000 on its new building. Contributions of $3250 have already been received.

Dr. Knapp a Septuagenarian.—Dr. Herman Knapp will celebrate his 70th birthday, March 17, and in 1904 his fiftieth anniversary as a medical practitioner. He was professor of ophthalmology at Heidelberg from 1864 to 1868. Since 1868 he has practiced his profession in New York City.

Success of Consumption Hospital.—Pleased with the success of the new tuberculosis division of the Metropolitan Hospital, the Commissioner of the Department of Public Charities has asked the Board of Estimate and Apportionment for $40,000, with which to equip four other buildings as pavilions for the reception of phthisis patients, and for $48,000 annually to maintain them.

Medical Societies Agree.—Dr. E. Eliot Harris, chairman of the Committee on Legislation of the New York State Medical Association, denies that Senator McCabe's Compulsory Vaccination bill is a source of dissension among the local and state medical societies, and says that the amendment proposed by the State Commissioner of Health modifies the drastic measures of the original bill, which inflicts three severe penalties for nonconformance with its provisions, and all the medical societies favor the amendment.

OHIO.

Ashtabula General Hospital has been incorporated at Ashtabula, with a capital stock of $10,000.

To Rebuild Hospital.—A bill is before the legislature to issue $1,000,000 in bonds to be used for the purpose of rebuilding the Cincinnati Hospital.

Personal.—Dr. Arthur F. Shepherd, Toledo, formerly of the staff of the Toledo State Hospital, has been appointed superintendent of the Dayton State Hospital.——Dr. Oliver P. Coe, Cincinnati, has been appointed resident physician to the Cincinnati Hospital at a recent meeting of the Board of Trustees, vice Dr. Walter Greiss, resigned.

Dr. Drake's Picture Presented.—At the meeting of the Marion County Medical Society, March 4, Dr. Russell C. Bowdish, the only surviving member of the organization of the Society in 1850, presented the Society with a life-size crayon picture of Dr. Daniel Drake, a pioneer physician of Cincinnati, who died in 1852. Dr. Drake wrote a work on "The Diseases of the Ohio Valley in the Northwest Territory," and contributed other works and papers on the prevailing diseases of the Queen City at an early day, and was among the early physicians in the organization of the Ohio Medical College and the Ohio State Medical Society.

Severe Requirements Reduce Classes.—The strictness of the medical laws in the State of Ohio has caused so great a decrease in attendance that combinations of various colleges are freely discussed. It is asserted that the coming fall will see the amalgamation of the Cincinnati College of Medicine and Surgery with the Miami Medical College, also of Cincinnati; as well as the Cleveland College of Physicians and Surgeons, controlled by the Ohio Wesleyan University of Delaware, Ohio, with the Medical Department of the Western Reserve University. It is needless to state that such combinations would be productive of the greatest good, not only in increasing teaching facilities but in raising the standard of medical education in the West.

The Osteopathy Bill.—The Cincinnati Academy of Medicine at its regular meeting of Feb. 3, 1902, took the following action:

The Academy of Medicine of Cincinnati urge most strongly upon the members of the Senate and General Assembly from Hamilton County to use their influence to defeat the osteopathic bill recently introduced and known as House Bill No. 170. This bill seeks to create a separate state board for the examination of those who desire to practice osteopathy, and has gone to the Judiciary Committee after two readings.

All physicians, no matter what school of medicine they desire to practice, must now secure their license from the Ohio State Board of Medical Examination and Registration. The law provides that those desiring to practice osteopathy shall only be examined on anatomy, physiology, chemistry and physical diagnosis—a list of subjects much less extensive than that in the bill presented. Osteopathy, according to its advocates, is based upon a knowledge of normal anatomy and the phenomena of disease, and they only claim special methods of cure. The present osteopathic bill, while it demands certain conditions and a period of study covering four courses of five months each, authorizes the osteopathic board to be created to dispense with these in their judgment, thus leaving them entirely free to act as they choose. The state is likely, therefore, to suffer an influx of ignorant and unqualified men, who will be free to treat disease of all kinds, for, in spite of their pretensions, we know that the osteopaths accept for treatment such diseases as cancer of the breast, goiter, eczema and rheumatism. We would call the attention of the delegation to the recent decision of the Supreme Court, State of Ohio vs. Gravett, in which osteopathy is defined as being the practice of medicine, and therefore coming under the supervision of the present law, the clause applying to them being only declared void because it specified four years' study being required before examination, while this period was not specified in that portion applying to other practitioners. In fact, the present state board required at that time that all colleges to be considered "in good standing" must have a full four-year course, and this was as equally binding as if specified in the law itself. The simple elision of the four-year clause will give the osteopaths full rights under the law to practice in Ohio provided they can pass the limited examination required of them. The creation of a separate examining board would, we feel, be a gross outrage upon the physicians of the state. [Signed] N. P. Dandridge, president; S. E. Cone, secretary.

PENNSYLVANIA.

Philadelphia.

Refuses to Endorse Municipal Hospital.—By a decisive vote the Philadelphia County Medical Society has refused to "endorse the administration of the Municipal Hospital during the present epidemic of smallpox."

Typhoid fever is somewhat prevalent in the city, 107 new cases having been reported during the last week. There is considerable fear of an epidemic owing to the filthy condition of the water due to recent freshets.

Expectoration in Public Places.—The Woman's Sanitary League of Pennsylvania, at a recent session appointed a committee of the members to wait on the secretary of the State Board of Health with the idea of securing state action on the matter.

Spring Medical School.—The medical department of the University of Pennsylvania proposes to establish a spring school of medicine for post-graduates. Courses will be provided in nearly all branches, including chemistry, anatomy,

physiology, bacteriology and pathology. It is said that the medical faculty will take a prominent part in the instruction.

Immunity.—The James C. Wilson Medical Society and many of its friends were addressed on March 7, by Dr. William H. Welch of Johns Hopkins University, Baltimore. The address upon "Immunity" was marked by simplicity and clearness. The speaker avowed great faith in the Pasteur methods employed in combating rabies and anthrax, and believes there is practical value in the active immunity used against the plague. Serum therapy in its present state, he believes, is practically valuable in only three conditions, namely, tetanus, diphtheria and snake-bite. A reception was afterwards held at the University Club in honor of Dr. Welch.

TENNESSEE.

Dr. John L. D. Walker, Chattanooga, has been convicted of infanticide and sentenced to imprisonment in the penitentiary for ten years. He has been released on bonds pending a new trial.

Sanatorium on Lookout Mountain.—Dr. Howard J. Reynolds, Nashville, is about to locate a large sanatorium for the treatment of tuberculosis, on Lookout Mountain or Missionary Ridge, Chattanooga.

Meharry Medical College Commencement.—The medical department of Walden University, Nashville, held its twenty-sixth annual graduating exercises, February 26. The graduating class numbered 56.

The Memphis controversy has been settled by the Medical Society of the State of Tennessee, which has notified the original organization now known as the "Memphis and Shelby County Medical Society," that it would be recognized by the State Society as the county organization.

St. Thomas' Hospital, Nashville, was formally opened January 29. More than $200,000 has been expended on its erection and equipment. The new part of the hospital contains 100 rooms, which are being furnished by Societies and individuals. The hospital is conducted by the Sisters of Mercy.

WISCONSIN.

People's Hospital, Milwaukee.—The new non-sectarian hospital to be erected on a site already selected by Rabbi Caro, is to be the People's Hospital. This is according to a suggestion made by Abraham Slimmer, who has offered to give $25,000 toward the building of the institution. Mr. Slimmer greatly desires that Milwaukee shall take a hand in the building of the institution. It is estimated that a new building and site will cost from $75,000 to $100,000.

Milwaukee Medical College Changes.—The capital stock of the college has been increased from $100,000 to $150,000 and extensive improvements are contemplated, including an addition to the hospital. Dr. Joseph H. Wallis succeeds Dr. Henry F. Kortebein as lecturer on surgery; Dr. William Becker succeeds to the chair of nervous and mental diseases resigned by Dr. William F. Wegge, and Dr. H. V. Wuerdemann will take entire charge of the eye and ear department.

Personal.—Dr. Harry Greenberg, Milwaukee, who recently returned from Europe, has been made a contract surgeon in the army and ordered to Manila.——Dr. William F. Wegge, professor of nervous and mental diseases, and Dr. Henry F. Kortebein, instructor in surgery at the Milwaukee Medical College, have resigned.——Dr. Fred C. Kovats, Milwaukee, has been selected as interne at the Emergency Hospital.——Dr. B. L. Stinson, Milwaukee, has located at Hale's Corners.——Dr. George Smieding, Jefferson, has moved to Racine.——Dr. J. Willis Rockwell, Melrose, has located in Lancaster.——Dr. Donald J. O'Connor, physician of the state reformatory at Green Bay, has resigned and Dr. J. Percy S. Lenfestey, Depere, has been appointed to fill the vacancy; Dr. O'Connor has located in Escanaba, Mich.——Dr. Leo Breitzmann, Neenah, has located in Marinette.——Dr. C. I. Ide, who has been in charge of the Emergency Hospital, Milwaukee, for several months, will leave for Los Angeles, March 1.——Dr. Charles Ramally, North Bend, has moved to Melrose.——Dr. Joseph E. Harris,, Reedsburg, who has just returned from a year's study in Vienna, will locate in Seattle, Wash.

GENERAL.

Enno Sander Prize.—The time limit for submitting the essays on "The Most Practicable Organization for the United States Army in Active Service," in competition for the Enno Sander prize, has been extended to March 31, 1902.

Contract Surgeons Entitled to Salute.—Contract surgeons in the Philippines are now entitled to receive a salute, according to a recent circular issued by Gen. Chaffee, as the status of contract surgeons, contract dental surgeons and veterinarians of the artillery and cavalry, is assimilated to that of commissioned officers, they are entitled to the salute prescribed for commissioned officers in the Army Regulations.

Smallpox.

Ontario: Dr. Hodgetts, the provincial medical officer stationed at Sudbury, reports several cases of smallpox that have recently arrived at that place from the lumber camps. He says the mild weather is having the effect of making the camps break up early. The danger, Dr. Hodgetts says, of the disease spreading during the next month, should be observed by the local boards of health. He recommends that all the local boards keep under surveillance all men returning from the lumber camps. The smallpox report for the month of February shows that 707 cases were reported, with one death.

Quebec: The Quebec Board of Health has just been invested by order in Council with full powers in regard to sanitary regulations for camps, mines, etc. The board, acting on the order, has divided the province into ten districts, with an inspector for each. The powers thus granted by the board had been sought for some time without success, but the increased spread of smallpox seems to have stirred the government to action.

Chicago: Not one of the 16 new cases of smallpox discovered last week had ever been vaccinated. All but two of these were colored people—thirteen of whom were taken from one lodging house. From the nature of their occupations—waiters in hotels, restaurants and barber shops, porters, attendants on bowling alleys and other avocations bringing them into personal contact with numbers of people—the exposure has been unusually widespread.

Buffalo: More cases of smallpox have been reported in a hitherto unaffected portion of the city, but the health authorities have traced the source from the Polish district where the majority of cases have occurred.

Philadelphia: The number of smallpox cases continues to decrease each week; the new cases reported for the week ended March 8 are 47.

Wisconsin: At a special meeting of the Manitowoc Board of Health it was decided that the city would provide free vaccination to all those desiring it, and special efforts would be made to have all vaccinated. The city is to pay 25 cents each, and furnish the vaccine. It is estimated that this will cost the city over $2000.

Indiana: A smallpox epidemic prevails in the southwestern part of the state which is known as the "pocket" of Indiana. There are 17 cases at Rockport, 15 at Birdseye and a number of cases of the disease at Evansville, Princeton and other towns. The disease prevails in an extremely mild form, however.

Arkansas: Smallpox is said to be raging throughout Mississippi County. Up to February 18, over 100 deaths had occurred; none of the victims had a vaccination scar, so far as could be learned by the local physicians. A proclamation was issued March 4, by the governor declaring smallpox epidemic in Perry County and naming the following board, upon the recommendation of President G. M. D. Cantrell of the State Board of Health: T. E. Holmes, J. P. McKinnis, J. N. Harris, Dr. J. W. Ryan, Jr., Dr. J. M. Mathews.

Kansas: During February 421 cases of smallpox in the state with no deaths were reported. The number of cases reported is much smaller than during the same period of last year in which 1335 cases occurred with 10 deaths.

Michigan: Smallpox was reported as being present in 153 places in the state during the last week.

Nebraska: At the meeting of the State Board of Health March 6, a report showing the number of cases of smallpox in the state during the month was made out. In the counties reporting, 764 cases are found, 189 of which are in Douglas County.

Tennessee: The secretary of the State Board of Health states that the smallpox situation in Tennessee is the best of any of the Southern States. It has been a hard fight for four years and now that the disease is becoming general all over the country this work is beginning to tell locally. There is far less of the disease than there was a year ago and there is nothing in the Tennessee situation to cause any alarm. The safe condition is due to the fact that the people of the state are well vaccinated. Between 60 and 75 per cent. of the entire population of the state has thus been made immune.

District of Columbia: Five new cases of smallpox developed during last week.

CANADA.

Grosse Isle Quarantine Station.—New buildings have recently been erected at the above quarantine station at a cost of $60,000.

General Protestant Hospital, Ottawa.—The 51st annual report of this institution has just been put in circulation. The total number of patients under treatment last year was 1400. Of these 702 were pay patients. In the outdoor departments 2163 patients were attended to.

Obituaries.—The death of Dr. James McLaren took place at his residence, Deer Park, North Toronto, on the morning of March 7. Deceased was born in 1824. He was graduated in Arts from Queen's College, Kingston, about 1850. He continued his college life in the medical faculty under Dr. Rolph, in the old Toronto School of Medicine, receiving his M.B. degree in 1853.——Dr. George W. Jackes, of Eglington, another suburb to the north of Toronto, died on the morning of March 7, of apoplexy. Deceased was in his 51st year, and had practiced in the same village for over twenty-five years.

Vaccination Debated in the Quebec Legislature.—A bill is before the Quebec legislature to amend the health laws of the province by curtailing the powers of the Provincial Board of Health in county municipalities and permitting municipal councils to take control of health matters. The promotor of the bill complains of the manner in which vaccination was controlled by the Board of Health, which he considers altogether too arbitrary. In face of the fact that smallpox is threatening to become generally epidemic throughout the province this legislator wishes to tie the hands of the Board of Health. The bill was referred to the Committee on Legislation, where Quebec people may well pray it may be lost.

Congress of French Physicians of America.—A very largely representative gathering of French-Canadian medical men was held the other evening at Laval University, Montreal, at which it was unanimously agree to hold a congress of the French physicians of America, at the city of Quebec, during the month of June, the occasion being the celebration of the golden jubilee of Laval University of Quebec. Dr. Brochu, of Quebec, was elected president, and three vice-presidents were appointed: Dr. E. P. Lachapelle, to represent the city of Montreal and province of Quebec; Dr. C. Provost, to represent the province of Ontario; Dr. Archambault, of Cohoes, N. Y., to represent the United States. Two general secretaries were appointed: Dr. A. Simard of Quebec, and Dr. Lesage of Montreal.

Medical Matriculation by Act of Parliament.—A discussion took place one afternoon last week in the Quebec legislature upon a bill introduced by a member thereof to permit medical students who commenced study prior to 1899 and who omitted to pass their preliminary examination to dispense with it. It appears that in 1898 a similar measure was passed for the benefit of those who had commenced their studies prior to 1896. This established a precedent for other students lacking a classical education to run the same risk, thinking that the legislature would see them through. The Hon. Mr. Flynn, leader of the opposition, ridiculed the measure, stating that if this sort of thing were to continue, classical education for entrance to the professions had better be abolished. Hon. Dr. Guerin moved the six months' hoist, which was adopted by a vote of 45 to 15.

Toronto Clinical Society.—At the regular meeting of the Toronto Clinical Society Dr. Herbert A. Bruce reported a case of typhoid fever with perforation, operation followed by recovery, with a subsequent subphrenic abscess, operation and recovery. This is the first successful case reported in Canada of perforation in typhoid fever operated on with recovery. The patient was a young medical practitioner, aged 28, practicing in a western Ontario town. Whilst in the performance of his duties last summer he contracted typhoid fever. The case went on in the usual way until along in the third week the patient was seized in the middle of one night with excruciating pains in the right iliac fossa. His physician was summoned but being absent in the country a fellow practitioner was despatched in his place. The pains were quieted with a hypodermic of morphin and on the following day his regular attendant arrived and diagnosed a perforation of the bowel. For this diagnosis he held out against three other practitioners and Dr. Bruce was summoned from Toronto. The diagnosis of perforation was confirmed by Dr. Bruce and an operation at once undertaken. This was some eighteen hours after the perforation was supposed to have occurred. The patient recovered nicely, until some time after Dr. Bruce was again summoned to his bedside and then a diagnosis was made of subphrenic abscess. This was operated on and two and a half quarts of pus were evacuated. The patient very nearly collapsed after this operation, but finally rallied and was present at the meeting of the Clinical Society along with his attending confrère.

FOREIGN.

Egyptian Medical Congress.—The 1st Egyptian Medical Congress will be held December 19 to 23, 1903, instead of December 10 to 14.

Death of Julius Wolff.—Professor and privy councillor Wolff owes his renown to his achievements in surgery and orthopedics. He was appointed director of the orthopedic surgical clinic at Berlin in 1884, and was in his 67th year at the time of his death, February 17.

Skoda's Pupils.—The Vienna University is preparing a memorial Festschrift in honor of the centennial celebration of the birthday of Josef Skoda. The committee in charge appeal to all who were at any time students under him to look up all their note books, etc., with records of the master. The committee beg for the loan of all such material, guaranteeing its safe return. The appeal is signed by Nothnagel, Schrötter, Benedikt, von Töply and Neuburger.

State Boards of Registration.

Washington State Examination.—The State Board of Medical Examiners held its semi-annual examination at Tacoma on January 7 and 8. The standard requirements for those having practiced ten years or over is a general average of 70 per cent.; those having practiced less than ten years are required to obtain an average of 75 per cent. The number of candidates was 60, of whom 42 were successful.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
1	H.	Chicago Hom. Med. Coll	1895	84
2	R.	Rush Medical College	1898	89
27	R.	Rush Medical College	1898	78
22	R.	Rush Medical College	1886	77
58	R.	Rush Medical College	1890	85
3	R.	Northwestern University, Chicago	1891	78
6	R.	Northwestern University, Chicago	1883	75
13	R.	Northwestern University, Chicago	1900	89
5	R.	University of Kansas	1896	79
8	R.	Wisconsin Coll. of Phys and Surg	1898	82
11	R.	College of Phys. and Surg., Chicago	1901	82
17	R.	College of Phys. and Surg., Chicago	1901	83
15	R.	American Med. Miss. Coll., Chicago	1899	76
19	H.	New York Homeopathic	1891	75
20	R.	Univ. of Minnesota (McGill, 1895)	1894	88
23	R.	University of Minnesota	1899	85
24	R.	University of Minnesota	1897	79
28	R.	University of Minnesota	1899	82
44	R.	University of Minnesota	1898	82
21	R.	Iowa State University	1883	79
25	R.	Tennessee Medical College	1901	84
26	R.	Western Reserve Univ., Cincinnati	1900	84
29	R.	Manitoba Medical College	1899	80
30	R.	Tokio University, Japan	1894	77
31	R.	Harvard University	1888	90
32	R.	University of Michigan	1901	83
33	R.	Medical College of Ohio	1889	73
32	R.	University of Michigan	1901	83
35	R.	University of Michigan	1886	77
36	R.	University of Michigan	1900	75
59	R.	University of Michigan	1886	79
34	R.	Athens Medical College		82
39	R.	Jefferson Medical College	1891	83
40	R.	McGill University, Montreal	1900	88
41	R.	Woman's Medical College, Chicago	1891	75
42	R.	University of Pennsylvania	1900	86
43	R.	Trinity Medical College, Toronto	1897	91
45	R.	Kentucky Medical College	1900	78
47	R.	Cooper Medical College	1899	80
48	R.	University of Oregon	1901	76
54	R.	Iowa College of Phys. and Surg	1889	83
55	R.	Bellevue Hosp. Med. Coll., New York	1878	86
60	R.	University of Vermont	1882	75

FAILED.

4	H.	Chicago Hom. Med. College	1901	73
56	H.	Chicago Hom. Med. College	1885	63
7	E.	Eclectic Med. Institute, Cincinnati	1882	53
12	E.	Eclectic Med. Institute, Cincinnati, (Louisville Med. Coll., 1876)	1871	46
9	R.	Keokuk Medical Coll. of Phys. and Surg., Iowa	1897	71
10	R.	Cleveland Medical College	1883	63
14	R.	Milwaukee Medical College	1897	56
16	R.	Jefferson Medical College	1871	61
38	R.	Jefferson Medical College	1876	66
18	R.	Coll. of Phys. and Surg., Chicago	1889	64
37	R.	Coll. of Phys. and Surg., Chicago	1901	67
46	R.	University of Louisville	1901	67
49	R.	Detroit College of Medicine	1897	71
53	R.	Detroit College of Medicine	1886	67
50	R.	Rush Medical College, Chicago	1897	67
51	R.	University of Copenhagen	1901	70
52	P.-M.	Physio-Medical College	1893	60
57	H.	Hahnemann Med. Coll., Philadelphia	1901	73

Correspondence.

Decapsulation of Kidney for Chronic Bright's Disease.

HOT SPRINGS, ARK., March 4, 1902.

To the Editor:—Since reading the admirable article of Dr. Geo. H. Edebohls, on decapsulation of the kidneys for chronic Bright's disease (*Medical Record*, Dec. 21, 1901, and THE JOURNAL, Jan. 4, 1902, p. 62), I am impressed with its far-reaching possibilities. It opens up a vast field of work in the cure of otherwise hopeless cases. Why could not this same procedure be resorted to in cirrhosis of the liver before the stage of atrophy sets in? Decapsulation of the upper surface of this organ would certainly take away a very great obstacle to the speedy formation of many large blood vessels for anastomotic duty. True, we have this anastomosis in a certain degree when we remove the epithelium by means of our friction with gauze sponges; but it is easy to see the vast difference between the small vessels which would penetrate this capsule and the very free circulation which would ensue if this membrane is partially removed.

Hence I would urge: 1, that the operation of Talma for acites be performed while the liver is large and swollen with inflammatory products, and before the period of organization and consequent contraction, the stage of atrophy, sets in; and 2, that in addition to the omental and abdominal wall anastomosis that the capsule of the superior surface of the liver be resected, instead of being simply rubbed with gauze.

This could very easily be carried out by making an additional incision along the edge of the ribs when the surface of the liver could be easily reached. Such additional incision will not materially augment the dangers of the operation, and we quickly provide means whereby the inflammatory material may be absorbed and removed. Yours truly,

JAMES T. JELKS, M.D.

Membership in County and National Societies.

SAN DIEGO, CAL., Feb. 28, 1902.

To the Editor:—In THE JOURNAL of February 22, page 525, is a communication suggesting to the effect that a clause in the by-laws affecting membership in the Association be so drawn as to except from its operation those members who for any reason have not maintained membership in the county society and do not desire to re-enter it. It seems to me that such a clause would be objectionable, distinctly retrograde and impolitic. It is one of the avowed objects, in fact the chief object, of the re-organization to effect a more thorough and perfect organization of the profession generally, and the county society is, by the proposed scheme of reorganization, to be the unit. I submit that it would be, to say the least, impolitic to create a class who might remain members of the Association and yet not be members of the local society; it would be a bad precedent. It should be no hardship for any member of the Association to become a member of his county society; indeed, I deem it his duty to the profession generally, and to himself especially, to be an active member of his county society, which will, by the way, be just what the local profession make it.

A physician in practice, if he is young and inexperienced, should be an active member that he may learn and benefit by such membership; if he is learned and experienced it is his duty to attend and instruct those who are or have been less favored than he; indeed, they ought to have the right to require such service at his hands. If it be required of a new member of the Association that he be a member and maintain membership and standing in his county society, surely an old member ought not to object to the application of the rule himself, "equal rights to all, special privilege to none." While it may not be germane to the subject at this time, I wish to state that it is my belief that no more effective way of raising the standard of ethical practice can be devised than that a rule should prevail that no license to practice should be issued except that the applicant be a member of the county society and in good standing, and that he should, in order to retain his license, *retain his membership and standing.* WILLIAM M. CUMMINGS, M.D.

Deaths and Obituaries.

Christian Fenger.

Christian Fenger was born, Nov. 3, 1840, in Copenhagen, Denmark. Following in the footsteps of his uncle, Professor Emil Fenger, he decided to study medicine. While still a student war broke out between Denmark and Germany, and he served as surgeon throughout that campaign. In 1867 he received his diploma. For two years he was assistant to Wilhelm Mayer in his ear clinic, and during 1868 and 1869, an interne in the Friedrich's Hospital, Copenhagen. When war was declared between France and Germany Dr. Fenger became surgeon in the Red Cross ambulance corps and served in that capacity during the war with the French army. He then studied in Vienna under Professor Billroth, returned in the winter of 1871 to Denmark and was prosector at the Copenhagen City Hospital from 1871 to 1874. In 1874 he presented and defended a thesis on "Carcinoma of the Stomach; Its Anatomy, Development and Extension," which gained for him the position of lecturer at the university. Late in 1874 he was made extraordinary professor of pathological anatomy. In 1875 he went to Egypt, was made a member of the Conseil Militaire and surgeon-in-charge of the Khalifa quarter of Cairo. Two years later he came to America and settled in Chicago. In 1878 he was appointed to the attending staff of Cook County Hospital, and in 1880 was made curator of the Rush Medical College museum. In 1887 he was elected professor of clinical surgery at the College of Physicians and Surgeons; nine years later he was made professor of clinical surgery at the Chicago Medical College, and in 1899 he was appointed to the same chair in Rush Medical College. During the last twenty-five years he has been surgeon to Cook County, Presbyterian, Mercy, Tabitha Norwegian, Passavant Memorial, Lutheran, German, and German-American Hospitals.

He died at 9:45 p. m., March 7, 1902, at his home in Chicago, after an illness of one week. The cause of his death was croupous pneumonia. True to his principles that he had so often taught, he requested, when he knew that he might die, that a postmortem examination be made. This request was complied with. In addition to the pneumonia, which involved the upper and middle lobes of the right lung, there were found an obliterating, healed tubercular pleuritis with calcareous bronchial glands, and three gallstones in the gall-bladder. A few months before his death, Dr. Fenger had had a slight attack of what he himself recognized as gallstone colic.

The funeral services were held at the New England Congregational Church, of which Dr. Fenger had for ten years been a member, the pastor, Rev. W. Douglas Mackenzie officiating. The interment was at Rosehill Cemetery.

The active pall-bearers, selected from Dr. Fenger's personal assistants, were Drs. Ludvig Hektoen, William E. Morgan, Samuel C. Stanton, James B. Herrick, M. L. Harris, A. Holmboe, C. Doepfner and Andreas Frick. The honorary pall-bearers, representing the University of Chicago, the medical colleges, medical societies and hospitals, were as follows: University of Chicago, President William R. Harper; Rush Medical College, affiliated with the University of Chicago, Drs. N. Senn and Frank Billings; Northwestern University Medical School, Dr. N. S. Davis, Jr.; College of Physicians and Surgeons, Dr. William E. Quine; Chicago Policlinic, Dr. Fernand Henrotin; Chicago Medical Society, Dr. N. S. Davis, Sr.; German Medical Society, Dr. Gustav Fütterer; Scandinavian Medical Society, Dr. N. Johnsen; Chicago Gynecological Society, Dr. Lester Frankenthal; Chicago Surgical Society, Dr. John B. Murphy; Chicago Pathological Society, Dr. Frank B. Earle; Medico-legal Society, Dr. W. L. Baum; Chicago Academy of Medicine, Dr. Harold N. Moyer; Journal of the American Medical Association, Dr. E. Fletcher Ingals; Presbyterian Hospital, Dr. Arthur D. Bevan; Passavant Memorial Hospital, Dr. H. B. Favill; Evanston Hospital, Dr. John Ridlon; German Hospital, Dr. J. H. Hoelscher; German-American Hospital, Dr. John Fisher; Tabitha Norwegian Hospital, Dr. B. Meyer; Cook County Hospital, Dr. Arthur R. Edwards and Dr. Frank S. Johnson.

Christian Fenger was generally recognized as one of the greatest surgeons of America, and his reputation was international. His contributions to medical literature were numerous, more than eighty articles being credited to him. When one remembers that he had made thousands of autopsies in Europe and in Chicago, that he was an expert microscopist, having had training in Arnold's laboratory, that he made it a practice to examine histologically and bacteriologically the specimens he obtained at his operations or at autopsies on his patients who

died, one understands why these articles are always based upon a sound and scientific pathological foundation, and are not solely the so-called "practical" articles. Experimental work upon the lower animals and the cadaver was frequently employed to prove his points. At the time of his death he was engaged in experimental work upon the kidney, in a knowledge of the surgical affections of which organ he has been declared, by a competent judge, to stand next to Simon and James Israel. These contributions were valuable also because he kept careful records of the cases used as the basis of his articles and because he made an exhaustive study of all similar recorded cases and of all literature bearing upon the subject in hand. His style was clear, shorn of unnecessary verbiage and characterized by an orderliness and system that were sometimes a surprise to those who heard him speak or read, and found it difficult to understand his somewhat hesitating and not fluent speech. But after all, the chief value of these contributions consists in the fact that this knowledge, pathological, clinical and bibliographical, was all carefully worked over and analyzed by that wonderfully logical mind, so that his reasoning seemed faultless and his conclusions inevitable. So careful was he in his observations, so impartially judicial in his decisions that one hesitated long before disputing any conclusions he had reached. That there was aught but absolute honesty in his work was never hinted at, even in the whispered and gossiping confidences of idle talk.

Christian Fenger

His work as a writer is solid, and will stand the closest criticism. Much of it is for all time. There is nothing that he has written, at least nothing with which we are familiar, that does not contain something of value, valuable at least for the time at which it was produced; some common error is corrected, some old truth presented in a new light, or some new discovery given to the medical world. Among the more important of his writings may be mentioned: "Nerve-stretching"; "Total extirpation of the uterus through the vagina"; "Hyperplastic salpingitis"; "Operation for the relief of valve formation and stricture of the ureter in hydro- or pyo-nephrosis"; "Basal hernias of the brain"; "Conservative treatment of saceulated kidneys; cystonephrosis"; "Stones in the common duct and their surgical treatment; with remarks on the ball-valve action of floating choledochus stones"; "Diseases of the ureter."

As a speaker he lacked fluency. His hesitating speech made it at first difficult to follow him. Yet he never lacked an audience at clinic, ward operation or at discussion in a medical society. And it is true that, to a certain extent, one could judge of the caliber of a man by finding out that man's estimate of Dr. Fenger as a speaker or clinical teacher. The best men listened respectfully as to a master; the poor or mediocre man became impatient, criticised, and was happy in his ignorance.

As an operator Dr. Fenger was painstaking and thorough. He was never a rapid workman. His operations on tubercular glands of the neck or carcinoma of the breast were lessons in thoroughness that often made other surgeons who flattered themselves that they had been careful in the removal of all diseased tissues, blush with shame as they thought of their own comparatively hasty and careless work. He thoughtfully considered every step of the operation. He always knew exactly where he was and with what anatomic structure he was dealing. He left nothing to chance. If in doubt as to the nature of a growth he stopped in his operation and examined microscopically; he often had books and drawings at his side during an operation to be consulted if need be; he ligated vessels that other surgeons would have let alone, trusting they would not bleed; he drained where others did not; he was almost finical about asepsis. This attention to the minutiæ, this extraordinary carefulness and thoroughness were well known to physicians and to patients, and gave the laity and the profession unusual confidence in him as a man who could be trusted to do the right thing and only the right thing on the operating table. And this same thoroughness explained his wonderfully successful results. He was a fearless operator but absolutely without a taint of recklessness. No surgical procedure was too formidable to be undertaken if justifiable. But no love of applause, no large fee, no morbid curiosity to see what could be done, tempted him to subject a human being to a procedure that he regarded as unjustifiable. He was a most conservative surgeon, erring oftener perhaps on the side of conservatism than of radicalism. One of his latest works is against the indiscriminate treatment of peritoneal tuberculosis by surgical measures.

His wonderful knowledge of pathology and morbid anatomy, his extreme caution in forming his opinion until all known means of information had been exhausted and his philosophical and logical modes of thinking made his advice in matters of diagnosis in great demand, and his decision was generally regarded as final and his judgment generally found to be correct. Yet he was most ready to acknowledge his limitations and often confessed his ignorance. "God only knows, and He will not tell," he often said when a case baffled all diagnostic or prognostic skill. He had the courage to acknowledge his mistakes of judgment or of technique as only a great man is capable of doing.

To the medical world in general the death of Christian Fenger means the loss of one of its great surgeons. To those who have lived in Chicago and the Northwest and have come within the circle of his immediate influence the loss is keenly felt as a personal one, and the place that he leaves vacant can never be filled by another. The death of no physician in the Northwest will be so sincerely mourned by so many physicians as that of Dr. Fenger.

But what was the mysterious charm by which he drew all

toward him? What was there in this quiet, modest, plain man, of simple tastes, of faltering speech that attracted all who came near him? It is always difficult to analyze a man's character and tabulate his qualities. The personal element really defies analysis. But it would seem as though the trait of character that made Dr. Fenger strong was his impersonation of truth. He was its very embodiment. His looks spoke of sterling integrity, his manner was unassuming, yet one of earnestness and sincerity. Whether one watched his careful, painstaking operation; whether one listened to his lectures or discussions where he slowly, but with irresistible logic made his meaning plain; whether one read his articles, clearly written, systematic and thorough, or whether one watched him step by step unraveling the intricacies of a perplexing case; wherever and whenever one saw or heard him there was the same impression created that here was a man who was aiming to seek out truth for truth's sake, and this is the essence of science. Fenger was the incarnation of the scientific spirit in surgery. Men about him saw this, they felt it; he imparted this spirit to them. Herein lay one of the elements that made him strong and a man of influence. Coming to Chicago as he did, twenty-five years ago, at a time when the new light of modern pathology had not yet broken upon the Northwest, he began his mission of imparting the truths of this recreated science. Against much opposition, in spite of many drawbacks, he fought his way. Others began to see the light that he had seen and were eager to learn of him. To hospital internes, to medical students, to doctors, to any one who showed a desire to learn and a willingness to study, he was glad to talk of things surgical and pathological. He sacrificed leisure and pleasure that he might help them.

The value of this work is incalculable, and only appreciated by those who know the conditions existing twenty-five years ago and the difficulties he encountered in his endeavors to spread the new knowledge. This is really Fenger's great work. He is revered as the father of scientific surgery in the Northwest, and with Senn in experimental work aroused this section of the country so that now there has grown up a group of well-known younger men who freely acknowledge that the right impetus to study was given them by this remarkable man. When the intellectual history of Chicago comes to be written, high among the great names will be that of Christian Fenger.

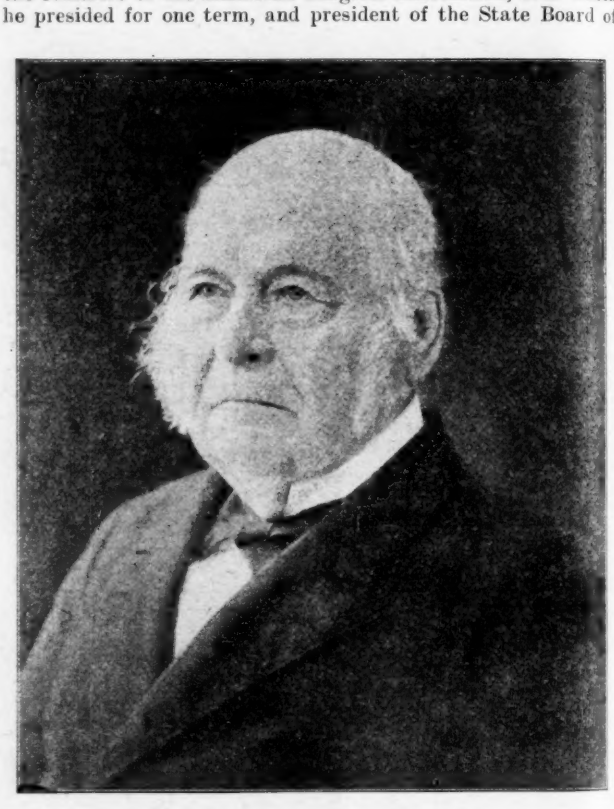
The casual observer sometimes thought him rough in his manner, unsympathetic, one who delighted in the use of the knife and whose finer sensibilities had been blunted. But nothing could be farther from the truth. He was as pure-hearted as a child, even child-like in his simplicity in many respects. He had the finest of fiber in his make-up. He loved flowers, beautiful scenery and children, and was not ashamed to show it. He was an unusually fine art critic and a lover of fine pictures. He himself had an ability to sketch with crayon or pencil that was of great help to him as a teacher. He was a linguist with a working knowledge of some seven or eight languages; he was a man of culture and refinement; he was incapable of a mean act; he had the soul of honor; he was a gentleman in the truest sense of the word. He was lovable and loving to a degree seldom granted to man. It is not meet to refer here to his domestic relations. But the grief-stricken wife and the two children who survive him know, as no one else can know, the depths of that great, true heart, and will always cherish the memory of a love and devotion such as are rarely seen.

It is a cause for congratulation that Dr. Fenger's friends and admirers let him and the world know of the esteem and love in which he was held. His colleagues among the Scandinavian colony in Chicago looked up to him as their honored leader, were proud of him and at every meeting of their medical society, whether he were present or not, drank the health of Christian Fenger. At the time of his death he was the president of the Chicago Medical Society, and for the second time of the Chicago Surgical Society. On Nov. 3, 1900, the medical profession of the country gave him a dinner, the occasion being the sixtieth anniversary of his birth. Over 500 physicians attended. This honor was deeply appreciated by Dr. Fenger. But no testimonial, no office of honor, was a more eloquent tribute to this man's character than the gathering at the funeral services. It is doubtful if so great a number of physicians have ever before come together in Chicago for such a purpose. The sad faces of his colleagues, and the tear-dimmed eyes of the long line of men and women, many of them his old patients and evidently from the poorer walks of life, as they took a last look at this beloved physician, spoke more than any uttered word.

It seemed as though he had several years of usefulness and happiness before him. But perhaps it is best that he should be cut down in the midst of his active work, with his mind still strong and vigorous, his eye undimmed, his hand steady, rather than that ruthless old age should rob him of any of those attributes with which we link his name. His work was in reality done. His monument is already erected in his medical writings, in the group of men whom he influenced and aroused to a higher scientific life, in the elevation of medical thought in the Northwest, in the example of an untiring devotion to truth, in the love that is left in the hearts of all who knew him.

Dr. Edward Mott Moore.

Dr. Moore graduated from the University of Pennsylvania in 1838. After a service as interne in Philadelphia, he went to Rochester, N. Y., and practiced there, filling the chair of surgery at Vermont Medical College, Woodstock, from 1842 to 1854, and thereafter at Berkshire Medical College, Pittsfield, Mass., and Starling Medical College, Columbus, Ohio. From 1858 to 1883 he was professor of surgery at Buffalo Medical College. He was a member of the American Medical Association, and its president in 1890; one of the founders of the New York State Medical Society, and its president in 1874; one of the founders of the American Surgical Association, over which he presided for one term, and president of the State Board of



EDWARD MOTT MOORE.

Health from its organization until 1855. He was a delegate to the International Medical Congress at Copenhagen in 1894, and for many years was president of the board of trustees of the University of Rochester. He died March 3 at his home in Rochester, from bronchitis, aged 88. Various medical and lay organizations of Rochester met and took action on Dr. Moore's death. The Rochester Academy of Medicine, at a meeting held March 5, took the following action:

We have heard with deep regret of the death, on March 3, 1902, of Edward Mott Moore, M.D., LL.D., the first Honorary Fellow of this Academy. It seems but a short time since Dr. Moore's acceptance of his election as Honorary Fellow was read to us. This was probably the last scientific organization which he honored by his membership. Many present will remember the occasion upon which he addressed the Academy upon the subject of "Fractures of the Clavicle," and will recall with pleasure his urbanity and grace, and the clearness which marked his statements. His mind seemed undimmed, and we hoped that he might be spared for many years to the city and to the profession which he loved so well. His death removes the oldest and ablest physician identified with the history of Rochester. Those of us have been fortunate who have been honored with his acquaintance and have come under his influence. Dr. Moore's life has been an inspiring illustration of high conceptions of the science of medicine and the humanities of life which should ever attach to its practice.

It was further Resolved, That the foregoing memorial be engrossed on the minutes of the Academy; that a copy thereof be

sent to the family of the deceased; and that such action be transmitted to The Journal of the American Medical Association. [Signed] J. W. Whitbeck, William S. Ely, Edward W. Mulligan, T. A. O'Hare, G. W. Goler, Committee.

The Monroe County Medical Society, at a special meeting held March 4, adopted the following minute:

Dr. Edward Mott Moore, for many years a member of this Society and once its president, died in this city March 3, 1902, in his 88th year. For seventy-two years Dr. Moore had been a resident of Rochester. After an excellent preliminary education, general and technical, he studied medicine and graduated at the University of Pennsylvania in 1838. In 1841 he began his work as lecturer, which was carried on for many years in medical colleges in Woodstock, Vt.; Pittsfield, Mass.; Cleveland and Buffalo.

During this time he was actively engaged in the study and practice of his profession. As a surgeon he was widely known and had a vast experience. His career embraced many of the wonderful achievements in medical science with which we are all familiar.

He performed major operations before the introduction of anesthesia in 1846. He was hospitable to new ideas, kept in touch with all real progress in his profession, and was closely associated with important discoveries and improved methods. He was the head of the staff of St. Mary's Hospital in this city from the founding of that institution.

Dr. Moore was a man of strong intellectual gifts—a clear vision, sane judgment, equitable temper, absolute self-control. He loved the society of the young, sympathized with the bright and ambitious student and was generous with his advice and help. His mind was essentially scientific and practical, therefore it followed necessarily that he was one of the first to accept the doctrines of Darwin and Spencer, and to interest himself in biological studies.

Dr. Moore was an advocate of independence in politics, of every civic reform. His influence for good in our city was constant, quiet, effective. His later years he devoted exclusively to the development of our system of park, working with wonderful prevision for the remote future and not merely the immediate present. That work gave him the distinction of being the father of the parks. His plans, if carried out, will more and more serve to keep alive his memory.

We have lost the oldest and the wisest of our medical friends. He had passed far beyond the four-score limit, yet only his physical strength had abated. He was still our trusted counselor and our stanch friend. We revered him only the more as time went on. We are grateful for the benefits that we enjoyed in this long and intimate relation of friendship, and shall continue under his influence, though he is withdrawn from our sight.

We adopt as our own expression the inscription of a memorial in St. Paul's cathedral, London, to an English physician: "Eminently distinguished for science. Beloved for the simplicity of his manners and the benevolence of his heart. Respected for his inflexible integrity. In all the relations of his professional life he was sagacious, cordial, diligent and humane."

We tender to his family, particularly to the sons who are our fellow members, our heartfelt appreciation and sympathy.

The Rochester Chamber of Commerce adopted the following minute:

The Rochester Chamber of Commerce records its high appreciation of the memory of Edward Mott Moore, who, modest in greatness, lived a long, useful and conspicuous life in Rochester.

He honored his city by eminent talents devoted to the alleviation of human suffering.

With far-seeing wisdom, he served his fellow citizens and future generations by securing to their use great gifts of nature within the municipal boundaries, and they are now his lasting monument.

Francis W. Lewis, M.D. Jefferson Medical College, Philadelphia, died from pneumonia, March 2, at his home in Philadelphia, aged 76. Ever since the founding of the Children's Hospital he has been identified with its interests, and was for many years president of its board. He was public spirited, serving upon the boards of the Academy of Fine Arts, the Library Company of Philadelphia, and the Zoölogical Society for many years. He was a member of the College of Physicians and other learned societies, and was also a member of leading social clubs.

William S. Crawford, M.D. Washington University, St. Louis, 1870, a leading practitioner and country physician of Jo. Daviess County, Ill., died from apoplexy at his home in Galena, February 28, after an illness of five days, aged 54. He was a native of Galena; a son of Dr. John S. Crawford, one of the early settlers of that city; studied in the Western Reserve University, Cleveland, and Rush Medical College, Chicago, finally graduating at St. Louis Medical College. He practiced with his father until the death of the latter.

Edwin Sinnett, M.D. Medical College of Ohio, 1850, was a life member of the Ohio State Medical Society, and army surgeon during the last two years of the Civil war. Though modest and retiring, he took an active part in Grand Army and in civic life. He served his town at some time in his career in all its offices, and his state in the upper house of the General Assembly through two terms. He died at his home in Granville, Ohio, February 22, in his 75th year.

John C. Nicholson, M.D. Jefferson Medical College, 1855, one of the oldest surgeons of Alabama, died at his home in Mount Meigs, March 3, aged 73, after a lingering illness. He was a member of Montgomery County and Alabama State Medical Societies and was prominent in agricultural organizations. He served through the Civil war, was once a member of the state legislature and rendered public service in many ways.

Hugh L. Cheney, M.D. Medical College of Ohio, Cincinnati, 1847, a pioneer resident and practitioner of Franklin County, Ohio, died at his residence in Columbus, February 26, aged 82. He had been prevented from the practice of his profession for about twenty years by ill health, and was totally blind for a long time.

William C. Spearman, M.D. Louisville (Ky.) Medical College, 1885, died of appendicitis at his home, Texarkana, Ark., February 21, aged 48. He was a member of the American Medical Association and the Arkansas Medical Society, and had been a member of the State Board of Health for 5 years.

Benjamin F. Kitchen, M.D. Medical College of Ohio, Cincinnati, 1871, formerly a representative in the state legislature from Jackson County, and at the time of his death the oldest practitioner in the county, died suddenly from heart disease at his home in Wellston, February 25, aged 67.

Morris W. Townsend, M.D. Jefferson Medical College, 1853, president of the Genesee County Medical Society, member of the New York State and American Medical Associations, died at his home in Bergen, N. Y., February 26, of cardiac hypertrophy, aged 75.

David C. Galbraith, M.D. Medical College of Ohio, Cincinnati, 1865, an old practitioner of Franklin, Pa., who served during the Civil war as surgeon under General Butler, died at Brunswick, Ga., where he had gone in the attempt to regain his health, February 28.

Herkimer B. Miner, M.D. College of Physicians and Surgeons of the Western District of New York, Fairfield, 1834, for more than fifty years a practitioner in West Mendon and Honeoye Falls, N. Y., died at his home in the latter place, March 2, aged 96.

E. Newlin Williams, M.D. University of Pennsylvania, 1898, died from cold and exposure, about February 8, in the White Mountains, near Glenclif, N. H., aged 28. His home was in Philadelphia, and he was on his way to inspect some wooded property.

Henry Ayres Hyland, M.D. Baltimore University, 1892, a well-known physician of Northeast Baltimore, and for a time demonstrator of anatomy at the University of Maryland, died at his home in Baltimore, February 26, from pneumonia, aged 47.

Richard Ferguson, M.D. University College of Medicine, Richmond, Va., 1897, formerly of Richmond, Va., was found dead in his house in Columbia, S. C., March 6. Death was due to chloroform, which it is suposed he inhaled to induce sleep.

Ervin A. Tucker, M.D. College of Physicians and Surgeons, New York, 1889, teacher of obstetrics and gynecology in Columbia University, attendant at Sloane Maternity Hospital, died at his home in New York City, March 3, of pneumonia.

Joseph W. Winslow, M.D. Berkshire Medical College, Pittsfield, Mass., 1845, for over fifty years a physician in Easthampton and Enfield, Mass., died, February 24, at his home in the latter place, aged 83, from a paralytic shock.

Rudolph R. Menard, M.D. Laval University, Quebec, 1897, a young physician of Biddeford, Me., was thrown from his carriage, February 15, and died at his apartments, February 20, without having regained consciousness, aged 29.

William E. Bibb, M.D. Jefferson Medical College, Philadelphia, 1848, a prominent physician of Albemarle County, Va., where he had practiced for fifty-four years, died at his residence near Free Union, February 28, aged 76.

William B. Hanes, M.D. Detroit (Mich.) College of Medicine, 1901, house physician at Harper Hospital, Detroit, died, March 3, from septicemia, contracted while performing an autopsy. He was 25 years of age.

Albigence W. Kingsley, M.D. Castleton (Vt.) Medical College, a practicing dentist in Elizabeth, N. J., for nearly fifty years, died at his winter home in Maitland, Fla., March 3, from angina pectoris, aged 86.

Sherman J. Hadley, M.D. Omaha (Neb.) Medical College, 1888, who practiced in Arlington, Neb., but was obliged, on account of his health, to go to Hot Springs, S. Dak., died in that place, March 1, aged 66.

Seth M. Benepe, M.D. Bellevue Hospital Medical College, New York, 1866, died at his home in Sebastopol, Sonoma County, Cal., February 20, seventeen months after a cerebral hemorrhage, aged 54.

Fred Lynn, M.D. Western Reserve Medical College, Cleveland, a practitioner of Cortland, Ohio, who went to Mexico six months ago for his health, died there, February 22, from consumption, aged 25.

William M. Madison, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, an old practitioner of Farmington, Mo., died from pneumonia at his home in that place, February 24, aged 55.

William D. Kearns, M.D. New York University, 1857, one of the best-known practitioners of Pittsburg, where he had practiced for 44 years, died from pneumonia at his home, February 24, aged 71.

Wellington Carleton, M.D. Detroit (Mich.) Medical College, 1871, one of the best-known practitioners of Ogle County, Ill., died at his home in Rochelle, March 2, from pneumonia, aged 60.

Theodore Turnbull, M.D. University of Maryland School of Medicine, Baltimore, 1881, a physician of Monticello, Fla., died at Baltimore after an operation, February 24, aged 41.

Francis H. Russell, M.D. Bellevue Hospital Medical College, New York, 1871, died, February 24, of paralysis of the throat, aged 54, at his home in Farmington, Me.

H. W. Sparks, M.D. Louisville (Ky.) Medical College, 1890, of Denton and Ashland, Ky., died at the former place, February 26, of pneumonia, at about 38 years of age.

William R. Neblett, M.D. University of Nashville, Tenn., 1867, died, February 27, aged 66, at his home in Chattanooga, where he had retired because of ill health.

Benjamin F. McCuistion, M.D. Kentucky School of Medicine, Louisville, 1890, was shot and killed by A. W. McComas at Paris, Texas, February 28.

Joseph A. Booth, M.D. College of Physicians and Surgeons, New York, 1882, died from heart disease at his residence in New York City, February 26, aged 62.

Conrad Mund, M.D. College of Physicians and Surgeons, New York, was drowned while sailing in Great South Bay, March 2. He was 28 years old.

Orrin M. Bailey, M.D. Western Reserve University, 1874, an old practitioner of Greensburg, Ohio, died from cancer at Warren, Ohio, February 24.

John K. Scribner, M.D. Jefferson Medical College, 1894, formerly of Pittsburg, died at Finleyville, Pa., March 2, aged 32, after a long sickness.

Charles H. Newell, M.D. College of Physicians and Surgeons, Chicago, 1900, died at Lynch, Neb., February 20, of pneumonia, aged 26.

Theodore H. Parks, M.D. College of Physicians and Surgeons, New York, 1860, died at his home, Ilwaco, Wash., February 28.

Robert Tabney Ball, M.D. College of Physicians and Surgeons, Baltimore, 1881, died at his home in Baltimore, February 25.

William T. Akins, M.D. Medical College of Fort Wayne, Ind., 1878, died March 6, at his home in Chicago, aged 61.

Married.

JOHN C. ANDERSON, M.D., Omaha, to Miss Myrtle Boyes, of Seward, Neb., March 3.

WILLIS M. METZLER, M.D., to Miss Lola A. Cross, both of Vanlue, Ohio, February 23.

W. E. STEWART, M.D., to Miss Dolores E. Sharp, both of Stratton, Neb., February 20.

THOMAS W. O'REILLY, M.D., St. Louis, Mo., to Miss Blanche Hay, of Saginaw, Mich., March 5.

BENJAMIN D. OSBORNE, M.D., Waldo, Ohio, to Miss Stella Gast, of Prospect, Ohio, February 27.

HENRY H. MITCHELL, M.D., Muldoon, Texas, to Miss Eula Ragsdale, of Wharton, Texas, February 19.

ALFRED HENRY EASTERLING, M.D., Athens, Texas, to Miss Margaret Mitchell Wofford, of Cuero, Texas, February 19.

IRVING R. SCHOONMAKER, M.D., Hallstead, Pa., to Miss Edith Daniels, of Scranton, Pa., at Binghamton, N. Y., February 27.

CHARLES WILLIAM HALGENS, M.D., Hot Springs, S.D., to Mrs. Richard H. Hunt, of New York, at South Bend, Ind., February 19.

Association News.

Report of the Committee on Transportation.

WASHINGTON, D. C., March 8, 1902.

The Committee of the American Medical Association on Transportation, reports that the rates for railroad transportation to the Saratoga meeting are being arranged for in the various railroad associations, and special prominence has been given to the disapproval of the medical profession of the methods of the Western Association in exacting the annoying fifty-cent execution fee which was perpetrated upon the members attending the St. Paul meeting. Assurances have been given that this will not occur at the Saratoga meeting, and at this writing the Trunk Lines have offered a fare and a third on the certificate plan for the round trip. Your Committee is urging a one-fare rate for the round trip with a 30-day-extension time limit and the privilege of a diverse route returning. Dr. Swan, of the local railroad committee at Saratoga, N. Y., is taking an active interest in the matter of rates, and is coöperating with the Committee of the Association. The combined efforts of the Committees are directed towards securing a one-fare rate for the round trip. Progress in this direction will be announced from time to time in THE JOURNAL.

H. L. E. JOHNSON, Chairman.

Societies.

COMING MEETINGS.

Medical Association of the Missouri Valley, Lincoln, Neb., March 20, 1902.

American Association of Pathologists and Bacteriologists, Cleveland, O., March 28-29, 1902.

Medical Association of the District of Columbia, Washington, April 1, 1902.

Tri-State Medical Society of Iowa, Illinois and Missouri, Chicago, April 3-4, 1902.

Tennessee State Medical Society, Memphis, April 8, 1902.

Florida Medical Association, Tampa, April 9, 1902.

Western Ophthalmological and Oto-Laryngological Association, Chicago, April 10-12, 1902.

Medical Association of the State of Alabama, Birmingham, April 15, 1902.

Medical Society of the State of California, San Francisco, April 15-17, 1902.

Medical Association of Georgia, Savannah, April 16, 1902.

Mississippi State Medical Association, Jackson, April 16, 1902.

South Carolina Medical Association, Spartanburg, April 16-17, 1902.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 22, 1902.

Association of American Physicians, Washington, D. C., April 29-30, 1902.

American Association of Genito-Urinary Surgeons, Atlantic City, N. J., April 30, 1902.

Delaware State Medical Society.—This Society will change the date of its annual meeting so as not to conflict with that of the American Medical Association.

Manchester (N. H.) Medical Association.—The fifth annual banquet of the Association was held February 26. Dr. John M. Gile, Hanover, was the guest of honor and delivered an address on "Intestinal Obstruction."

Alton (Ill.) Medical Society.—This Society has elected the following officers: Dr. Titus P. Yerkes, Upper Alton, president; Dr. Frank Worden, North Alton, vice-president; Dr. George E. Wilkinson, Alton, secretary; Dr. Charles Davis, Alton, recording secretary, and Dr. Waldo Fisher, Alton, treasurer.

Putnam County (Tenn.) Medical Society.—At the meeting of this Society in Cookeville, March 3, the following officers were elected: Dr. Samuel Denton, Buffalo Valley, president; Drs. J. B. S. Martin and H. R. Ragland, Cookeville, vice-presidents; Dr. John T. Moore, Algood, secretary, and Dr. Claude P. Martin, Cookeville, treasurer.

Cincinnati Academy of Medicine.—At a meeting of the Academy, March 3, the following officers were elected for the ensuing year: Dr. Asa B. Isham, president; Drs. Brooks F. Beebe and Ellen F. McCarthy, vice-presidents; Dr. Stephen E. Cone, secretary; Dr. Arch I. Carson, librarian; Dr. Magnus A. Tate, treasurer; Drs. Byron A. Stanton, James F. Heady, and N. Pendleton Dandridge, trustees.

PHILADELPHIA OBSTETRICAL SOCIETY.

Regular Meeting, held Feb. 6, 1902.

Recurrence of Shoulder Presentation.

DR. FRANK C. HAMMOND read a paper entitled "Shoulder Presentation Occurring Twice in the Same Patient." The woman, aged 35, was first seen in consultation in her fifth labor, previous labors having been normal. The position of the fetus was right dorso-anterior, the fetus being dead with the right arm prolapsed. Podalic version was done, under chloroform anesthesia, the after-coming head being readily delivered by the Viet-Smellie method. The patient made an uninterrupted recovery. Just about one year after the above-mentioned labor, Dr. Hammond examined the same patient and found her near the end of her sixth pregnancy, with the child in the right occipito-anterior position, vertex presentation. Ten days later he was again summoned to the patient, then in labor. The attending physician stated that, during a strong uterine contraction, the amniotic sac had ruptured with a resultant prolapse of a flexed arm and the funis. The right elbow was found presenting, and the prolapsed cord beating feebly. Pulsations ceased while preparation was being made for delivery. Podalic version was again accomplished, but the after-coming head was arrested at the superior strait and resisted efforts at delivery by several methods. The head was finally delivered by the high application of forceps, the latter being easily done. The etiological factors were a pendulous abdomen, relaxed uterine walls, and a comparatively small fetus in both instances.

DR. CHARLES A. BARNES discussed the paper, citing two cases of shoulder presentation which he had recently treated by podalic version.

Genital Malformations.

DR. E. E. MONTGOMERY'S paper with the above title referred to cases that had come under his personal observation. One was a young woman, aged 23, who came to him in December, 1899, to determine the advisability of undergoing an operation for the construction of a vagina. Examination revealed no trace of vaginal structure. As the patient was engaged to be married, the writer decided to undertake the construction of a vagina. This was done by transverse incision and blunt dissection between the bladder and rectum. A cavity was thus constructed 2½ inches in depth. This cavity was lined partially by flaps formed through splitting of the labia minora, and partially by skin flaps two inches long, one from each thigh. The cavity was then packed with iodoform gauze which was not removed for nearly a week. The grafts all held, and at the end of two weeks a glass vaginal plug was substituted for the gauze.

In January, 1902, the patient came to the author suffering with appendicitis and the appendix was removed. Since the patient had suffered much from menstrual molimina request had been made that the ovaries also be removed. The right ovary was found connected with a very tortuous tube which arose from the cornu of the uterus. The latter was about one and a half inches long with a rounded fundus. The left ovary and tube were found well to the left side of the pelvis, springing from a rudimentary cornu a scant inch in length. Both ovaries and tubes were removed. The two uteri were only connected by a slightly thickened band. The structures appeared to have developed from widely separated Müllerian ducts which had in no part coalesced. Their lower portions had become obliterated without the vagina and cervix being developed. The vagina, which had been constructed two years previous, seemed of good size externally, and was found to be a scant two inches in length, although the vaginal plug had not been worn for over a year.

Dr Montgomery cited another case, an unmarried woman, who suffered intensely with dysmenorrhea and was discovered to have a double vagina with a cervix in each. Abdominal incision disclosed a bicornate uterus united at the cervix, but with two separate cervical canals. The right cornu contained several myomata, one of which projected by a teat-like process into the internal os—undoubtedly the cause of the severe dysmenorrhea. The other horn also contained myomata.

The speaker last summer operated upon the wife of a physician for a large myomatous growth. She had borne two children at term. While doing hysterectomy by the abdominal route, in separating the vagina from the cervix, the operator cut into a sac, at first thought to be the bladder. On close observation this cavity was found to communicate with the uterine cavity by a separate os. Here had been a uterus biseptus, one side of which communicated with a blind vaginal pouch. The uterine septum had been destroyed during pregnancy. Later, this blind pouch became several times its former size and formed a distinctly fluctuating tumor. This was incised and evacuated by the vagina. The partition between the sac and the normal vagina was cut away and the mucous surfaces united, with satisfactory result. The writer once examined a patient in which a peculiar bridle hung between the labia extending from the anterior to the posterior vaginal wall. This was the remnant of a vaginal septum, the superior portion of which had been destroyed by her labor. Recently, in dilating the uterus of a young woman, the bougie passed over to the left side, and the curet passed over what seemed to be a growth as a tortuous canal. Upon opening the abdomen, a bicornate uterus was disclosed. In this case the cornua had a common cervix and cervical canal. These cases, the speaker asserted, present some of the difficulties of accurate diagnosis, and are sometimes instructive from the standpoint of therapeusis. The paper was discussed by Dr. F. Hurst Maier.

Rectal Cancer.

DR. WILMER KRUSEN read a paper entitled "A Case of Cancer of the Rectum Operated upon by Murphy's Method."

Out of 7878 cases of carcinoma collected by Williams from London hospitals, 499 had their initial seat in the large intestines, 401 of these involving the rectum. The case operated upon was Mrs. P. M., aged 68. Patient was a well-preserved woman for her age, but entered the hospital complaining of extreme constipation with great weakness and loss of appetite. Within the last two years she had had several hemorrhages from the rectum. Defecation was very painful at times. On examination, an annular stricture was found with an ulcerating mass on the rectal wall, about three centimeters above the external sphincter, and a diagnosis of carcinoma was made.

Operation was done as follows: An incision was made vertically in the middle line through the posterior vaginal wall down to the rectum. The posterior vaginal wall was dissected laterally from its attachments, and the anterior rectal wall exposed. It was not necessary to invade the peritoneal cavity. The rectum was divided transversely above the growth and the proximal end of the rectum was grasped with four forceps which controlled all bleeding and indicated the lumen of the bowel. The involved portion of the rectum was then excised just above the external sphincter, which was uninjured. The bowel was then drawn down and sutured with fine chromicized catgut through the anal opening to the narrow collar of healthy tissue which remained around the anal orifice. A large rubber drainage tube was introduced into the rectum. The vaginal incision was then closed very much as in performing a Hegar's perineorrhaphy. Convalescence was uneventful and at the time of writing there has been no recurrence of the disease.

By permission of Dr. E. E. Montgomery, the writer reported a second case similar to the first, with the exception that a semilunar incision was made posterior to the anus down to the rectum, and that the sphincter was cut through anteriorly. The former served for drainage after operation; the ends of the sphincter were united by sutures of catgut. The paper closed by an enumeration of the advantages of the operation as summarized by Murphy in his original paper. The paper was discussed by Dr. Montgomery.

At the business meeting of the Society, a resolution was adopted to the effect that abstracts of papers read before the Society should be given to various medical journals; and that the authors of papers should be free to publish them, with the discussion, in whatever journal they may see fit.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, Feb. 17, 1902.

President, Dr. Parker Syms, in the Chair.

Management of Normal Labor.

DR. BERNARD COHEN, Buffalo, opened the Symposium on Obstetrics with the above-mentioned paper, and laid special stress on the importance of medical supervision throughout pregnancy, and of pelvic examinations prior to confinement. The urine should be examined once a month up to the eighth month, and then weekly, the quantity of urea and indican excreted being included in this examination. The physician's hands should be scrubbed with green soap and immersed in a 2-per-cent. solution of lysol prior to making a vaginal examination, and the instruments should not only be made sterile but so placed as to keep them sterile. He favored the moderate use of anesthesia during labor. The patient should be kept in bed for 12 days and should not be allowed to go around the house until the third week.

Use and Abuse of the Forceps.

DR. EDWARD A. AYERS read this paper, claiming that about 1 case in 25 is benefited by the proper application of the forceps. An indication for their use, to which there was hardly an exception, was a slowing and weakening of the uterine contractions and a decided rise in the pulse rate. The traction should not only be intermittent but the blades should be relaxed after each traction. In expert hands the ordinary forceps would give 90 per cent. of the traction in the axis of the inlet, but in difficult cases it was important to secure the other 10 per cent., and hence in these the Tarnier axis traction forceps should be employed. The use of Reynolds' traction rods and similar makeshift applications to the ordinary forceps lacked the efficiency of the true axis traction instrument and were not without danger. It was easy to show that when the thighs are flexed the tension on the outer portion of the perineum is increased, and hence the practical suggestion to extend the patient's limbs when the head reaches the vulva.

Diagnosis and Treatment of Puerperal Sepsis.

DR. FREDERICK HOLME WIGGIN commented upon the fact that although it had long been known that puerperal fever was another name for wound infection, the mortality in every-day private obstetric practice was as high as fifty years ago. If the pulse of the puerperal woman rose above 90 and the temperature above 100.5 F., and remained so for twenty-four hours, it was the duty of the physician to at once search carefully for the cause. If not on the alert, the presence of a general peritonitis might be the first thing to attract the physician's attention. It usually occurred between the third and seventh day. Malaria and typhoid fever could be excluded by examination of the blood, and the nature of the puerperal infection determined by bacteriological investigation. The birth canal should be inspected for evidence of infection, and the practitioner should not hesitate to explore the uterus if it seemed necessary, and treat this cavity promptly and energetically, for, if this were done, the septic process could usually be controlled. Retained secundines should be removed, the cavity cleansed by the use of hydrogen peroxid and then Monsell's solution applied. If pyemia occurred, it was possible that life might be saved by an abdominal section. In advanced cases of puerperal sepsis our main reliance should be on an abundance of nourishing and easily assimilable food and the free use of copious hot saline infusions.

Venesection and Transfusion in Puerperal Eclampsia.

DR. ROBERT ABRAHAMS said that he had been led to adopt the treatment indicated by the title of his paper by the remarkable effect noted in an apparently desperate case of puerperal eclampsia, resulting from the occurrence of a profuse postpartum hemorrhage. His usual practice was to remove about 20 ounces of blood by venesection, and then immediately inject high up into the colon about three quarts of hot saline solution. Four cases were cited as examples of what could be accomplished by this means. The rationale of this treatment was that it removed considerable toxic material, relieved the intense cerebral congestion, induced free sweating and urination, and, by causing thirst, encouraged the patient to drink water freely, and so still further stimulated the emunctories. This combination of venesection and saline infusion was comparatively new, although venesection alone had long been a recognized mode of treating eclampsia. If the patient were on the verge of serious collapse it was better to introduce the saline infusion directly into a vein.

DR. RALPH WALDO said that he had never seen a case of puerperal sepsis in which he was willing to do a hysterectomy. His treatment of hospital cases consisted in thorough exploration of the uterus if the os were patulous, and the use of the dull curette.

DR. WILLIAM R. PRYOR also expressed his disapproval of hysterectomy as a surgical procedure in cases of puerperal sepsis. Curettage of the septic uterus had a mortality of 20 per cent., but curettage of the putrid uterus was a comparatively safe and simple procedure. His own method of treating puerperal sepsis consisted in isolating the infected uterus by a packing of 5 per cent. iodoform gauze, after curettage, and then counteracting the resulting iodism by the use of saline infusions.

DR. GEORGE TUCKER HARRISON paid a glowing tribute to the memory of Semmelweiss, to whom modern obstetrics owed so much. The cases of sapremia would recover almost without treatment, but the more virulent forms of puerperal sepsis were not readily controlled by any known treatment.

DR. S. MARX characterized cases of sapremia as those having a high temperature, a low pulse and a foul uterine discharge. Undoubtedly there was in such cases a positive indication for curettage, but it was utter folly to use any form of curette in cases in which there was no reason to believe there was in the uterus any material demanding removal. While his experience with Marmorek's antistreptococcus serum had been most disheartening, he had more recently secured some decidedly encouraging results from serum freshly prepared in this country. He had occasionally employed in cases of eclampsia the method advocated by Dr. Abrahams. Where it was indicated, there was usually also need to empty the uterus; hence, it was convenient to allow the bleeding to take place from the uterine sinuses instead of resorting to venesection. He had known very severe attacks of eclampsia to occur while the patient was so thoroughly under the influence of veratrum viride that the pulse was down to 60.

DR. L. ZWISOHN, speaking of the necessity for accuracy in diagnosis in cases of puerperal sepsis, called renewed attention to a symptom that he had found occasionally useful—a peculiar luster of the eye.

DR. BERNHARD COHEN was disposed to attribute a good deal of the puerperal sepsis to the fact that obstetricians were so poorly paid for their services that they could not make use of their best efforts. He believed that the average obstetric fee throughout this country was less than $10. The general practitioner was compelled to attend obstetric cases in the course of his daily routine, and hence it was not uncommon for him to go from scarlet fever or other infectious or septic cases directly to the lying-in chamber.

DR. E. A. AYERS thought one of the great causes of puerperal sepsis was the length of time of the exposure to infection, which was certainly vastly greater than in the operations of general surgery. He condemned the prevalent practice of resorting to chloroform in every case of puerperal eclampsia, often just when the patient most needed oxygen. He recommended the use of anticonvulsives and such measures as would stimulate the processes of elimination. Where the brain was threatened by the enormous intracranial pressure, venesection was certainly indicated, but there were many other cases of puerperal eclampsia in which Dr. Abrahams' method of treatment was inapplicable.

DR. WIGGIN, in closing, said that he felt that Dr. Pryor's method of treatment was irrational, for, although iodin acted on the products of bacilli it was not itself directly bactericidal; and the only benefit from opening the cul-de-sac and packing with gauze was that it caused the formation of adhesions.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Treatment of Stye (Hordeolum).

Dr. Casey A. Wood, in *Med. Standard*, states that styes are more often seen in young people and are the sign of a general disturbance of health. In many cases they are the symptoms of eye strain, resulting from an error in refraction. In the earlier stages before pus has formed he advises pulling out the eyelash which runs through the stye and touching the swelling with pure carbolic acid or tincture of iodin. Otherwise the stye should be opened and contents evacuated. Warm fomentations or hot stupes may be applied to relieve the pain and promote suppuration, and in a day or two a mild mercuric ointment should be rubbed over the diseased part. The following is recommended by him:

R.	Hydrarg. oxidi flav.	gr. ii	13
	Vaselini puri	ʒi 30	

M. Sig.: Apply locally once or twice daily and rub in well.

Styes very frequently arise in anemic subjects and chlorotic girls. In such cases he recommends proper diet and fresh air, and the following as a tonic:

R.	Tinct. ferri chloridi		
	Acidi phosphorici dil.		
	Tinct. rhei, āā	ʒi 3	75
	Quininæ sulph.	gr. iii	19
	Liq. strych.	ʒss 15	
	Syr. simplicis, q. s. ad	ʒviii 248	

M. Sig.: One teaspoonful three times a day in water.

Blepharitis Marginalis.

In cases of blepharitis marginalis, which involve the borders of the lids and is eczematous in nature, he recommends the removal of the crusts; in order to do this sometimes the eye lash has to be removed also, which will prevent the reformation of the crust. Otherwise, the crusts may be soaked with the following solution, and easily removed:

R.	Sodii carbonatis	ʒss 1	90
	Aq. destil. q. s. ad	ʒiii 93	

M. Sig.: Apply locally to the crusts.

After the removal of all the scabs, an ointment similar to the following should be applied and thoroughly rubbed into the edges of the lids:

R.	Hydrarg. oxid. flavi.	gr. ii	13
	Ung. aquæ rosæ	ʒi 30	

M. Sig.: Apply locally and rub in well at bedtime.

The following solution containing boric acid should be applied several times during the day:

R.	Acidi borici		
	Sodii biboratis, āā	gr. xv 1	
	Aq. rosæ	ʒii 7	50
	Aq. destil. q. s. ad	ʒi 31	

M. Sig.: Apply locally several times a day.

Turpentine as an Antiseptic.

According to the *Med. Record*, glycerinated turpentine may be used with success as an antiseptic in the treatment of wounds. Dr. Kossobudsk fills a sterilized bottle with glycerin and adds a small quantity of turpentine. This should be well shaken and allowed to stand for two days; then he adds a small quantity of a 5 per cent. solution of hydrogen dioxid; it is then ready for use. As an antiseptic it checks excessive secretion when applied to wounds, relieves pain and swelling, and promotes the healing process. This action is thought to be due probably to the oxygen liberated and partly to the properties of the turpentine.

Gastro-enteric Infection of Infants.

Zahorsky, according to the *Med. Standard*, commences treatment with a dose of castor oil or mild chlorid of mercury, and in severe cases he orders colonic flushings. He also advises the exclusion of a milk diet, giving water only for a few hours. Later he recommends starchy gruels, egg albumin and veal or mutton broth. He does not place so much reliance in gastro-intestinal antiseptics, stating, however, that they may inhibit bacterial growth. He regards bismuth as the best drug, which may be combined with other antiseptics as follows:

R.	Bismuthi subnit.	gr. lxxx 5	
	Bismuthi salicylatis	gr. xx 1	33
	Syr. rhei arom.	ʒii 16	
	Aq. q. s. ad	ʒii 62	

M. Sig.: Take one teaspoonful every three hours.

Sometimes he combines resorcin with the bismuth as follows:

R.	Resorcin	gr. xx 1	33
	Bismuthi subnit.	gr. lx 3	75
	Syr. zingiberis	ʒss 15	
	Aq. q. s. ad.	ʒii 62	

M. Sig.: One teaspoonful every two or three hours; or:

R.	Creosoti	m. iv	25
	Bismuthi subnit.	ʒi 3	75
	Syrupi acaciæ	ʒi 31	
	Aq. menth. pip. q. s. ad	ʒii 62	

M. Sig.: One teaspoonful every three hours; or:

R.	Guaiacol carb.	gr. x	66
	Bismuthi subcarb.	gr. xl 2	66
	Pulv. arom.	gr. i	06

M. Ft. chart. No. x. Sig.: One every three hours.

The nutrition should receive the proper attention. Starvation may be proper for two or three days, but later food, consisting of proteids and carbohydrates, must be supplied.

The Uses of a Combination of Camphor and Menthol.

L. S. Somers, in *Merck's Archives*, recommends the combination of camphor and menthol in different strengths in liquid petrolatum as a local stimulant to the nasal mucous membrane. He recommends the following combinations in nasal and pharyngeal disorders by dropping them into the nose with a pipette:

R.	Camphor-menthol	m. x	66
	Olei eucalypti	m. x	66
	Olei petrolati q. s. ad	ʒiv 120	

M. Sig.: A few drops into each naris when there is local congestion of the nasal mucous membrane; or use as spray; or:

R.	Olei eucalypti	ʒii 3	75
	Olei cassiæ	m. xl 2	66
	Olei gauitheriæ	m. xl 2	66
	Camphor-menthol	m. xl 2	66
	Olei petrolati q. s. ad	ʒiv 120	

M. Sig.: Use as a spray to stimulate the mucous membrane in case of chronic pharyngitis associated with dryness of the membrane.

In cases of subacute and chronic rhinitis, before there is permanent tissue change, he recommends the following:

R.	Cocainæ hydrochlor.	gr. ii	13
	Olei cassiæ	m. x	66
	Camphor-menthol	m. xv 1	
	Olei petrolati	ʒii 60	

M. Sig.: Use as a spray two or three times a day.

Treatment of Acute Gastralgia.

According to Short, as noted in the *Ther. Gazette*, gastralgia is essentially a condition in which the patient should be treated and not the disease. The functional activity of the stomach is not at fault, so that helps to digestion in the way of pepsin, etc., are of no benefit. A complete change, with alteration of of occupation and freedom from worry, will often stop the attacks. If this is impossible, the best thing to do is to give the stomach complete rest. This should be done by keeping the patient in bed and feeding him either by the rectum, or if orally, by giving as little as possible. He recommends active purging early in the trouble. For the attacks themselves morphin or cocain may be given in a draught. Sharp counter-irritation over the stomach by blistering is often very useful, just as in other forms of neuralgia. He recommends in some cases the application of the faradic current to the epigastric

region for a few minutes at a time to relieve the pain. Increase the current gradually until actual pain is produced if no inflammatory condition is present.

Hemorrhage of the Bowels in Typhoid Fever.

A. Thomson, of Adrian, Mich., in *Merck's Archives*, recommends a tablet containing gr. 3/4 of plumbi acetas and gr. 1/4 of pulverized opium, which should be given every half hour, or oftener if the case is urgent. Bismuth subnitrate or the subgallate is of great value as an antiseptic and aid in quieting the bowels. The bowels should not be evacuated for forty-eight or seventy-two hours, after which time an enema may be carefully administered. In cases of violent peristalsis and diarrhea hypodermic injections of morphin may be resorted to. Sometimes tannin, lead acetate and bismuth subnitrate in combination are quite effective. The application of the ice-coil to the abdomen is of great service in relieving the hyperemia and reducing the temperature. Astringent enemas are of no avail as they do not reach the location of the trouble. Castor oil is a safe cathartic and has proved very safe in his hands as a cathartic in this condition.

Medicolegal.

Care Required of Oculist as Physician—Expert Fees.—The Supreme Court of Louisiana says, in the malpractice case of Stern vs. Lanng, that the rule is well settled that the oculist who treats a patient must exercise in that regard the care and skill usually exercised by oculists in good standing. He may be rendered liable for his gross mistakes. This was an action against a reputable oculist of large experience to recover damages for the alleged unskilful and negligent manner in which he, as a physician, performed the duty he had assumed. In other words, it was for personal injuries alleged to have been sustained by reason of negligence and want of skill on his part in the method he followed in removing a tumor below the left eye. But it was not shown by a preponderance of testimony that he, through want of skill or negligence, committed a mistake for which he could be held pecuniarily liable. Experts testified that he followed the established practice, and it was not shown that he committed a gross error, the proximate cause of the injury of which complaint was made. Wherefore, on the ground that the law and the evidence was in his favor, the Supreme Court affirms a judgment which he obtained below. It says that the result of the treatment is not all that is necessary to a recovery of damages. It must be made evident that there was negligence or want of skill. Because there was intense pain felt by the patient after an incision, it says that it did not necessarily follow that it was owing to the negligence or unskilfulness of the physician. It remains that one who is suffering while undergoing a surgical operation is not always the best judge of the cause of the pain he feels. With reference to the complaint of the patient that the physician sought to lull his anxiety (which was natural) about his eye by telling him to be patient and let nature act, and in time it would be all right, the court does not think there was anything in this for which the physician could be held liable. Objection was made to three witnesses summoned by the physician being allowed $25 each, as experts, and the fees taxed as costs. Louisiana Act. No. 19 of 1884 provides for compensation to be fixed by the court where the testimony requires special study and experience, and the amount of compensation is in great part left to the judge. And, in upholding the allowance in this case, the Supreme Court says that the number of expert witnesses was not excessive, in view of the importance of the issues. It takes it as well settled that it is within the court's power to determine the amount of the compensation; also to restrain the litigant, and keep him within proper bounds, who summons or attempts to summon uselessly a number of expert witnesses.

Medical Services for Infant—Charging Wrong Person.—The Supreme Court of Mississippi says that in the case of Williams vs. Bonner the former was called as surgeon and physician by J. L. Bonner to attend upon his minor daughter, Ruby Bonner, who lived with him, some 10 miles in the country. Ruby was involuntarily shot by her own hand, was seriously wounded, and her life despaired of. The doctor's bill for $107.50 was agreed to be reasonable. He charged the account when made simply to J. L. Bonner, who declined to pay it, and was admittedly insolvent. But J. L. Bonner was the guardian of Ruby, who had a small estate in his hands, and the Doctor brought this suit, in chancery, against him as guardian. The defenses were: 1, that the Doctor having charged the account at first to J. L. Bonner individually was precluded from recovering the same of him as guardian; 2, it was said that Bonner could not, as guardian, contract to pay any sum of money, so as to encroach upon the capital of the estate of the minor in his hands, and therefore a suit could not lie against him as guardian under the circumstances of this case. The decision was against the Doctor in the lower court. But that is reversed by the Supreme Court. The latter says that it regards it as a matter of small moment that the account was first charged against Bonner individually. When all the facts and circumstances relating to the matter and to the persons connected with them were made known to the Doctor, he was then at liberty to charge his account as right and justice dictated. Continuing, the Supreme Court says that the doctrine relating to the duties of a trustee at common law (and in this category the guardian stands to his ward) requires him, when the life of the beneficiary is put in competition with the expenditure of his property, to sacrifice the latter, if need be, for the former. That medical services are necessaries to an infant may not, upon the authorities, be questioned; and that an infant himself (there being no other to do so) might call in a surgeon, and bind his estate for a reasonable fee, can not be denied, and what an infant himself might do, this court thinks a guardian could do for him. The general rule undoubtedly is that a guardian may not ordinarily exceed the income of the ward in his maintenance and education, without a previous order of court therefor. But there are exceptions to the rule, and in a case where the court, if it had foreseen the event, would have made an allowance therefor, though exceeding the income of the estate, there the guardian, of his own authority, and without previous authorization, may make the necessary expenditure. Assuredly, adds the court, this case, not to be anticipated by human wisdom or foresight, in which the despair of life of the ward called for aid from the principal of her own estate, and which aid none other would render, was one of the cases covered by the exceptions.

Liability for Spread of Smallpox by Escaped Patient.—The Supreme Court of Texas takes up the consideration of the case of the Missouri, Kansas & Texas Railway Company of Texas vs. Wood, accepting it as settled that the company's local surgeon had been duly authorized to take charge of an employe who had the smallpox. This being so, the principal question before it was whether the negligence of such surgeon in employing an incompetent nurse or attendant for the patient, and the negligence of such attendant in permitting him to escape while delirious, rendered the company liable for the damages sustained by a party by reason of the smallpox being communicated to him and his family by such patient. Counsel for the company argued that the quarantine of the patient was a public duty, which the city might have taken in hand without liability for the acts of its officers, drawing therefrom the conclusion that for performing the same acts the company was entitled to the same immunity. But the Supreme Court says that the company did not represent the State of Texas, and was not entitled to the immunity from liability which is accorded to the state. Then, the proposition was urged that the company owed no duty to the party claiming damages, and that therefore there was no liability at his suit for the patient's escape. But the court holds that this case belongs to the class where the duties are intended to benefit the individuals composing the public, because whatever affects the health of the community necessarily affects the individual members thereof; and that, when the duty to prevent the spread of a contagious disease rests upon a private corporation or person, an obligation arises in favor of each member of the commun-

ity, and a right of action exists in favor of him who suffers from its breach. And it holds that whenever the duty of restraining another arises, and the power of control over him exists, liability will follow upon a failure to perform the duty. If the company had undertaken to keep a horse known to be affected with a contagious disease at the same place and by the same means, and the horse had been permitted, through the negligence of the attendant, to escape, and had communicated the disease to a horse, the property of the party asking damages in this case, there would have been no doubt of the company's liability for the damages. If there was a sound reason for denying to him as great security for his wife and children against the diseased man as would have been accorded to him in favor of his beasts against a diseased horse, the court says that it had not been suggested by counsel, and that it was unable to discover any tenable basis for the distinction. The amount of diligence which was required of the company depended upon the character of the disease and the danger of communicating it to others. In the end, the court says that the object of placing this patient in a tent and supplying a nurse and guard for him was not alone to care for and to provide for him, but also to protect the public against infection by contact; and when the railway company undertook to treat him for the disease, and to care for him at the place designated by the mayor of the city, it assumed the duty of using ordinary care to prevent the patient from exposing himself in delirium, or from being exposed otherwise, so as to communicate the disease to other persons; and, having failed, through the negligence of its employes, to use such care, and by reason of its negligence the patient having escaped and communicated the disease to this other party's family, the company was liable for the damage caused thereby. Hence, the question propounded was answered in the affirmative.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record (N. Y.), March 1.

1 *Some Varieties, Complications, and Sequelæ of Smallpox as Noted in the Norfolk Epidemic of 1898-1899. Lemuel C. Shepherd.
2 *Follicular Tonsillitis. Robert C. Brown.
3 A Case of Presenile or Angiosclerotic Gangrene Precipitated by Influenza. Theodore B. Barringer, Jr.
4 Discoveries in Pathology. Mary D. Jones.
5 Report of Five Cases of Ulcer of the Esophagus, Diagnosed as Pulmonary Tuberculosis. Mark I. Knapp.

Medical News (N. Y.), March 1.

6 *Suturing the Head of the Humerus to the Acromion in Old Subcoracoid Dislocation. Carl Beck.
7 Diphtheria; with Special Reference to the Symptoms and Treatment. Lawrence T. Royster.
8 *Acute Pelvic Suppuration; Its Conservative Treatment. John O. Polak.
9 *Ventrofixation: A Suggestion. Victor C. Pedersen.
10 *A Case of Leukemia, Preceded by Mucosanguinolent Colitis and Physiologic Leucocytosis. G. W. McCaskey.

American Medicine (Philadelphia), March 1.

11 *Remarks on the Diagnosis of Pancreatic Disease. William S. Thayer.
12 A Case of Very Persistent Laryngeal Stenosis. J. P. Crozer Griffith.
13 *The Treatment of Acute General Peritonitis. Eugene A. Smith.
14 A Preliminary Statement of the Alkalinity of the Blood in Infections and the Infusion of Salts Derived from Horse's Blood-ash as a Therapeutic Measure. A. Emil Schmitt.
15 Respiratory Gymnastics; Empyema and Atelectasis; Lung Reflex; The Heart in Diseases of the Lungs. Albert Abrams.
16 *Suggestions to Anesthetizers. Frank E. Simpson.
17 *Some Remarks on the Use of Adrenalin as an Addition to Solutions for Local Anesthesia. Charles A. Elsberg.

New York Medical Journal, March 1.

18 Cholelithiasis, Cholecystitis and Cholangitis. William H. Thomson.
19 *Some Notes on the Early Diagnosis and Treatment of Pulmonary Tuberculosis. J. Edward Stubbert.
20 A Bougie Removed from the Abdominal Cavity; Ruptured Umbilical Hernia. Joseph T. Johnson.
21 Traumatic Rupture of the Gall-bladder without Injury of the Liver; 64 Ounces of Bile in the Abdominal Cavity; Recovery. DeForest Willard.
22 *The Value of the Eosinophile Count in the Differential Diagnosis of Human Blood. Orrin S. Wightman.

Boston Medical and Surgical Journal, February 27.

23 *Five Maine "Murders." Addison S. Thayer.
24 *The Significance, Pathological and Clinical, of Abdominal Pain. (Concluded.) Maurice H. Richardson.
25 *Some Points of Value in the Diagnosis of Disease of the Abdominal Organs. Henry Jackson.
26 Acute Perforation of a Malignant Ulcer of the Pylorus Resembling a Case of Acute Appendicitis. E. A. Codman.
27 Bronchopneumonia in Epidemic Form. William W. McKibben.

Philadelphia Medical Journal, March 1.

28 *Two Cases of Adiposis Dolorosa; One in a Man, Complicated by Epilepsy; Another in a Woman, Presenting also Circinate Retinitis. F. X. Dercum.
29 A Case of Ascites, Due to Hepatic Cirrhosis, Treated by Transplanting the Omentum between the Peritoneum and Abdominal Wall. W. J. Roe and Geo. W. Spencer.
30 The Progress of Knowledge Concerning Venom and Antivenene, a Synoptical Review of the Literature of the Past 15 Years. (Continued.) Joseph McFarland.
31 *The Recognition and Training of Mental Defectives. Martin W. Barr.
32 *A Further Report on Cases of Tuberculosis Treated by Intravenous Injections of Sodium Cinnamate. Alfred Mann.
33 *The Ice-pack and Its Definite Therapeutic Advantages Over Other Methods. Lester L. Roos.

St. Louis Medical Review, February 22.

34 *Prostatectomy; Presentation of Six Operated Cases, with Remarks upon the Technique of the Operation. J. P. Bryson.

March 1.

35 Report of a Case of Hydrocephalus (Possibly Acquired) with Postmortem. Louis Rassieur. With Pathologic Features of the Case. Carl Fisch.

Cincinnati Lancet-Clinic, March 1.

36 Forceps. Magnus A. Tate.
37 Rest and Recreation by a Busy Physician. Geo. J. Monroe.

Pediatrics (N. Y.), February 15.

38 *Artificial Infant Feeding. Samuel A. Visanska.
39 *The Eye Defects which May Cause Apparent Mental Dulness and Deficiency in Children. Charles S. Bull.
40 Epidemic Cerebrospinal Meningitis; Meningeal Hemorrhage; Intussusception; Diaphragmatic Hernia. Isaac Abt.

Annals of Gynecology and Pediatry (Boston), February.

41 *Management of Fibromyomata Complicated by Pregnancy. Miles F. Porter.
42 *Myomectomy; Its Place in the Treatment of Fibromyoma of the Uterus. O. Beverly Campbell.

Iowa Medical Journal (Des Moines), February 15.

43 The Mental Condition of Assassins of Public Men. Richard Dewey.
44 Syphilis. M. E. Silver.
45 Myoma of Broad Ligament. Kate S. Harpel.
46 Present Status of the Question of Tuberculosis. Eli Grimes.
47 Sarcoma of Femur. D. D. Cohen.

American Practitioner and News (Louisville), February 1.

48 *Management and Treatment of Typhoid Fever. W. F. Boggess.
49 Clinical Memoranda of a Few Rectal Cases. John B. Enright.

Peoria Medical Journal, January.

50 Galistones: Pathognomonic Symptoms of Recurrent, Partial or Complete Impaction of Bile Ducts; Operative Treatment. Otis Johnston.
51 Treatment of Syphilis. J. C. Paine.

Hot Springs Medical Journal, February.

52 *Sterilized Vellum for Preventing Adhesions After Laparotomy. Charles H. Cargile.
53 *Typical Forms of Pneumonia Complicating La Grippe. Claiborn Watkins.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), December, 1901.

54 The Light Cure in Lupus. William F. Breakey.
55 A Study in Obstetrics. James E. Davis.
56 Conservative Treatment of Emergency Surgical Cases. Frank B. Walker.
57 Some Practical Thoughts Regarding Affections of the Ear. Emil Amberg.
58 The Restriction of Scarlet Fever. Guy L. Kiefer.
59 Why Does One Take Cold? Alexander Stewart.

Archives of Pediatrics (N. Y.), February.

60 *A Contribution to the Symptomatology of Cretinism and Other Forms of Idiocy. Henry Koplik and Jacob Lichtenstein.
61 *An Account of a Mild Epidemic of Uncertain Nature in Children. Rowland G. Freeman.
62 Multiple Arthritis in a Child 2 Years Old Suffering from Gonorrheal Vulvo-vaginitis. Geo. N. Acker.
63 *Hare-lip. B. K. Rachford.
64 General Subcutaneous Emphysema Complicating Pneumonia. Samuel Pierson and Walter L. Carr.
65 Cough in Influenza Simulating Whooping Cough. Alfred Friedlander.

Medical Bulletin (Philadelphia), February.

66 One Thousand Ophthalmic Operations. (Continued.) L. Webster Fox.

67 Association of Hysteria with Insanity. F. Savary Pearce.
68 The Modern Treatment of Rheumatism. F. Sontag.

Mississippi Medical Record (Vicksburg), February.

69 Prophylaxis and Treatment of Sexual Perversions—A Plea for More Rational Methods in Sexual Education. E. F. Howard.
70 Remarkable Loss of Weight, in Hemophilia. M. F. Coomes.

Alabama Medical Journal (Birmingham), February.

71 Malarial Toxemia as a Cure of Puerperal Convulsions; with Report of Two Cases. E. O. Williamson.
72 The Conservative Surgical Treatment of Appendicitis. W. E. Fitch.
73 Some Uses of Static Electricity. J. B. Goodwin.

University of Pennsylvania Medical Bulletin (Philadelphia), February.

74 Snake Venom in Relation to Hemolysis, Bacteriolysis and Toxicity. Simon Flexner and Hideyo Noguchi.
75 *A Case of Complete Absence of the Visual System in an Adult. William G. Spiller.
76 A Case of Tuberculosis of the Skin Following Accidental Inoculation with Bovine Tubercle Bacillus. Mazyck P. Ravenel.
77 An Extensive Case of Vitiligo. Henry Norris.

Medical and Surgical Monitor (Indianapolis), February 15.

78 Description of a Set of Mastoid Gouges. Geo. F. Keiper.
79 A Report of Three Abdominal Operations. Hannah M. Graham.
80 Injury to the Cranial Bones before Closure of Fontanelles Causing Epilepsy; Recovery After Operation. William B. Fletcher.
81 A Study in the Evolution and Psychology of Sex. (Continued.) N. E. Aronstam.
82 Epithelial Carcinoma—Treated by the X-Ray. Lillian A. Crockett.

Medical Examiner and Practitioner (N. Y.), February.

83 Modern Life Insurance—Does Its Medical Selection Reflect the Scientific Advance of the Past Century? Charles L. Greene.
84 Hernia in Relation to Life Insurance. W. B. DeGarmo.
85 Hernia Considered from the Point of View of Insurance Against Accidents. Y. Coert.
86 The Environment of the Medical Examiner. A. C. Cotton.
87 Albuminuria Considered from the View of Life Insurance. B. J. Stokvis.

Annals of Surgery (Philadelphia), February.

88 *The Technics of Nephropexy. George M. Edebohls.
89 Note on the Distribution of the Branches of the Internal Iliac Artery and the Zones of Exsanguination Resulting from Its Deligation. Byron Robinson.
90 *Ligation of the Abdominal Aorta for Aneurysm. Robert T. Morris.
91 The Symptomatology, Diagnosis and Treatment of Carcinoma of the Cecum, with a Report of Two Cases. Charles Greene Cumston, and Albert Vanderveer.
92 Elbow Fractures in Children. Frederic J. Cotton.

The Post-Graduate (N. Y.), February.

93 Otorrhea in Children. Max Toeplitz.
94 Clinical Lectures. Seneca D. Powell.
95 Notes from the Clinics. Dr. Caille, William B. DeGarmo, Samuel G. Gant, and D. B. St. John Roosa.

Providence Medical Journal, January.

96 Epidermoid Carcinoma; with Some Reference to Its Treatment by the Cancer Quacks. Walter Lee Munro.
97 Some Phases of Epilepsy and the Epileptic Constitution. George F. Keene.
98 Notes from the Providence Lying-in Hospital for the Month of October, 1901. Halsey DeWolf.
99 Methods Proposed for the Restriction of Tuberculosis in Providence. C. V. Chapin.

Western Medical Review (Lincoln, Neb.), February 15.

100 *Hemochromatic Bodies in Pernicious Anemia. William K. Yeakel.
101 Treatment of Acute Otitis Media by the General Practitioner. F. S. Owen.
102 *The Misleading Significance of Ovarian Pain. C. Lester Hall.
103 *Treatment of Irreducible Backward Dislocation of the Astragalus by Opening the Joint and Repositing the Same. W. Jepson.
104 Dynamic Medication. L. A. Merriam.
105 Observations in Europe. John P. Lord.
106 The Diagnostic Value of the Gastric Functional Signs. Alfred O. Peterson.

Canadian Practitioner and Review (Toronto), February.

107 Smallpox and Vaccination. (To be continued.) John Caven.
108 A Résumé of Facts Relating to the Digestive Organs in the Infant. C. S. McKee.

Journal of Medicine and Science (Portland, Maine), February.

109 *An Operation for Ventrosuspension of the Uterus and Ovaries. W. L. Cousins.
110 Some Phases of Quackery. P. J. Noyes.
111 Some Unsolved Problems in Tenement-house Life. E. A. Knopf.
112 A Practical Method of Controlling Nasal and Uterine Hemorrhages. E. Gard Edwards.

Occidental Medical Times (San Francisco), February.

113 Simulation of Insanity. (Concluded.) A. W. Hoisholt.
114 Erythema Following Injection of Antidiptheric Serum. Frank P. Gray.
115 On Some Forms of Conjunctivitis, Chiefly Etiologically. C. S. G. Nagel.
116 New Surgical Points on Appendicitis. J. Coplin Stinson.
117 Camphoroxol and Menthoxol in Suppuration of the Middle Ear. A. E. Phelan.
118 Hygiene and Treatment of Tuberculosis. T. B. Holmes.
119 Is Astigmatism Like Myopia, Ever Progressive? George C. Pardee.

Fort Wayne Medical Journal-Magazine, January.

120 *Formaldehyde in the Treatment of Germicidal Diseases. H. C. Howard.

Mobile Medical and Surgical Journal, February.

121 Insanity. E. D. Bondurant.
122 Diseases of the Maxillary Sinus with Report of Sarcoma. A. A. Greene.
123 Ectopic Pregnancy—Report of a Case. W. H. Sledge.
124 Adrenalin. R. F. Harper.
125 Treatment of Acute and Chronic Gonorrhea of the Male Urethra. W. R. Jackson.
126 Lacerations of the Perineum. J. B. Killebrew.

Detroit Medical Journal, February.

127 Pathologic Conditions Impairing the Singing Voice. Francis X. Spranger, Jr.
128 The Value of Abdominal Palpation in the Diagnosis of Diseases of the Stomach and Intestines. Charles D. Aaron.
129 Vaccination and Chicken-pox. E. S. Sherrill.
130 The Medical Treatment of Gallstones. E. S. Sherrill.
131 Electro-therapeutics. Orville W. Owen.

Southern Medical Journal (La Grange, N. C.), February.

132 In Memoriam: Dr. Charles J. O'Hagan. Thomas M. Riddick.
133 *Treatment of Diphtheria. R. A. Patterson.
134 Paralysis; A Report of Cases. M. B. King.

Southern California Practitioner (Los Angeles), February.

135 A Plea for the More Careful Removal of Foreign Bodies from the External Auditory Canal. Thomas J. McCoy.
136 Report of Two Cases of Cataract with the Usual Complications. Geo. S. Hull.
137 Symptoms of Eye Strain. W. S. Fowler.
138 Reduction of Nasal Obstruction with London Paste. A. C Rogers.

Texas Medical News (Austin), February.

139 Neurasthenia. J. K. Brown.
140 Some Interesting Cases in Surgery. T. J. Bennett.
141 Obstetric Forceps; History, Indications and Uses. O. H. Radkey.
142 Intra-peritoneal Retro-uterine Hematoma—Report of a Case. H. A. Barr.
143 Acute Lobar Pneumonia. D. M. Cooke.

Charlotte Medical Journal, February.

144 Diseases of the Ovaries. W. Gill Wylie.
145 Some Amusing Instances of Nasal Reflex. Arthur G. Hobbs.
146 A Case of Emergency Surgery in the Country. H. W. Lewis.
147 Some Duties of the Physician with Regard to Two Important Factors of Heredity and Environment. I. A. McSwain.
148 Penetrating Wounds of the Eyeball. B. R. Kennon.
149 Does It Pay to Give Cod-liver Oil in Consumption? H. Y. Ostrander.
150 Thyroiditis. F. R. Millard.
151 Modern Methods of Treating Syphilis. Eugene C. Hay.

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1. **Smallpox.**—Shepherd describes certain varieties observed and gives observations from the recent epidemic of smallpox. A few of these may be mentioned. In some cases there was a picture of corymbose or confluent patch type of the disease, and in some other cases the eruption toward the close of its development became surrounded by red and very much indurated bases; the solid parts of the pocks remained, and were much raised above the surface of the integument; they continued to grow until they formed papular excrescences resembling warts, which were hard to reduce. He suggests the tubercular diathesis in these cases. The most frequent complications were eye affections; conjunctivitis in about ten per cent. In a few cases there was marked ptyalism in the beginning of the vesicular stage, which continued into the late scabbing stage. In others there were enlarged submaxillary and sublingual glands. Secondary infections seem to attack certain cases, aggravating the cutaneous lesion and prolonging convalescence. In the two cases in which the disease occurred the second time the individuals claimed to have had smallpox in childhood and showed pits in evidence. They both had well-marked, though discrete, cases in the second infection.

2. **Follicular Tonsillitis.**—In this article Brown describes follicular tonsillitis and remarks that it is one of the most satisfactory diseases to treat. He finds the best results from the use of salicylate of soda and gives coal-tar products to relieve headache and pain. The points which he has endeavored

to present are summed up as follows: 1. That follicular tonsillitis is not caused by a single microbe, but that many well-known micro-organisms are capable of causing it. 2. That the symptoms of tonsillitis are partly caused by an exaggeration of its function. 3. That under the stimulus of infection the lymph corpuscles in the adenoid structure of the tonsil produce an antitoxin that is antagonistic to invading germs. 4. That the characteristic symptom is an exudate having no texture and non-adherent. 5. That the presence of the Klebs-Loeffler bacillus is not positive evidence that the disease is not a simple follicular tonsillitis. 6. Lastly, that there seems to be some relation between follicular tonsillitis and the infectious diseases which is not yet properly understood; that whatever the function of the tonsil, it seems in disease to endeavor by its activity to assist nature in eliminating infection. He says that many cases diagnosed as diphtheria are really follicular tonsillitis. He thinks that antitoxin has been given ten times in follicular tonsillitis where it has been given once in diphtheria. This does not mean that he depreciates antitoxin, which he considers the supreme remedy in diphtheria.

6. **Suturing the Head of the Humerus to the Acromion.**—In a case of old shoulder dislocation which had resisted numerous attempts at reduction, a nearly semilunar incision was made by Beck, beginning at the acromion and running over the intertubercular sulcus and extending vertically alongside the anterior surface of the arm, exposing both the joint and the acromion. After careful dissection of the adhesions the humerus was successfully rotated into the glenoid cavity, but there was a pronounced tendency to forward displacement which could not be overcome by additional exposure. He therefore fastened the head of the humerus in the cavity by sutures to the acromion after having drilled a hole through the acromion as well as through the head of the humerus. The latter was found to be very soft; a skiagraph taken two weeks later showed the joint in a good condition; good results seemed to have been secured. It seems to him that this procedure is far superior to resection of the head of the humerus, as advised by many surgeons, no force being required, and by it laceration of muscles, blood vessels and nerves is easily avoided.

8. **Acute Pelvic Suppuration.**—The conservative treatment of pelvic suppuration is the subject of Polak's article. The statements and claims he gives are summarized as follows: 1. Early diagnosis in pelvic suppuration is imperative. 2. When the diagnosis is made, operate. 3. The vaginal operation is the one of choice. 4. When it is done early with strict asepsis it is curative and may preserve the function of the woman's organs. 5. It improves the patient's condition, makes subsequent operation easy, prevents rather than causes adhesions. 6. It may be used for diagnosis in obscure cases without shock or injury to the patient (if aseptically performed). Finally, this operation may be applied to every acute suppurative condition within the pelvis.

9. **Ventrofixation.**—Pedersen suggests an operation on the principle of McBurney's intramuscular method of suturing the abdomen in appendectomy and remarks that the procedure has probably not been described in medical literature. The details as given by him are as follows: 1, exposure of the sheath of the rectus through a median cutaneous incision two or three inches long; 2, strong retraction of the skin to one or the other side; 3, opening the sheath of the rectus about three-quarters of an inch from the median line; 4, liberal loosening of the rectus from its sheath and retraction of it as far outward as possible; 5, opening of the peritoneal cavity; 6, loosening of the peritoneum behind the linea alba; 7, search for large vessels at this point; 8, passage of the sutures as follows: The median edge of the peritoneal wound is seized with forceps and the needle is introduced half an inch away from the middle line; it is next carried through the uterus, emerging beyond the median line on the opposite side; it is then passed forward through the peritoneum, previously loosened as described, and then through the linea alba sufficiently deep to secure a firm hold; the two ends are then seized in an artery clamp; the other suture is passed in the same way and both are tied, so that the knot is extraperitoneal; 9, suture of the peritoneum; 10, restoration of the rectus to its sheath; 11, ordinary layer sutures close the rest of the wound. The result of this operation is that the uterus is suspended in the median line, as in Kelly's original operation, while the scar is lateral to the point of fixation and is itself protected by the healthy rectus muscle, being "staggered." In closing the sheath of the rectus mattress sutures were used, so arranged that they did not pull on a single bundle, but on many bundles of fibers. This was accomplished by passing the needle near the edge on the right side of the wound and emerging quite far from the edge on the left side. Then on the left side it again pierced the fascia near the edge and emerged on the right side far from the edge. When these stitches were tied this arrangement gave perfectly uniform apposition and the advantage of there not being any likelihood of their cutting through at the least strain. Another detail which seemed very advantageous in two cases operated on was the insertion of a retention catheter into the bladder before the uterus was suspended. By this it was possible to inject six to ten ounces of sterile salt solution and indicate the best place for fixing the uterus with the bladder full. This enables one to avoid pressure of the uterus on the bladder for the first few months it is hoped, and in neither of his cases has the patient suffered from this cause.

10. **Leukemia.**—After reporting a case of leukemia, McCaskey notes certain points of interest, the most important one being the preceding existence of chronic colitis of long standing associated perhaps the greater part of the time with catarrhal disease of the small intestine. This, taken in connection with physiologic leucocytosis definitely recognized before the appearance of myelocytes, raises a very interesting question of etiology. The relationship of chronic colitis and leukemia is of interest. He does not consider it evidence as to the possible infectious nature of leukemia, though it is strongly suggestive. Just what is required beyond the toxic action or malnutrition of intestinal origin is not easy to say. It may be spoken of, he says, as a general vulnerability—a peculiar tendency to take on degenerative changes of embryonic type—on the part of the tissue under consideration. If this is unsatisfactory as an explanation it is not more so than the explanation given for the effects of family predisposition in tuberculosis.

11. **Pancreatic Disease.**—In answer to the questions: What criteria do we possess for recognizing gross anatomical changes in the pancreas? What means have we for appreciating disturbances of function of the pancreas? What are the diagnostic features of the more important changes in the pancreas? Thayer goes over the data in our possession and remarks: "In conclusion, it may be said that while we possess as yet no diagnostic symptom of pancreatic disease, unless indeed further observation should confirm the possibility of the demonstration in acute pancreatitis, of the fat-splitting ferment in the urine, yet clinical and pathologic experience have taught us certain combinations of symptoms which justify a diagnosis in various forms of pancreatic disease. Acute pancreatitis should be recognized in many instances. The importance of an early recognition of those cases which go on to extensive necrosis and to suppurative parapancreatitis is easily appreciable. Chronic interstitial pancreatitis is to be suspected under the following conditions: 1. Instances in which glycosuria develops in an individual with chronic cholelithiasis. 2. In cases of glycosuria in association with cirrhosis of the liver. 3. In glycosuria in the course of hemochromatosis. 4. In glycosuria following attacks suggestive of pancreatic colic. Pancreatic lithiasis is recognizable only when calculi are found in the stools. Cysts of the pancreas are usually to be recognized on account of their location. Primary cancer of the pancreas is often latent. The presence of obstructive jaundice with distended gall-bladder and rapidly developing cachexia, in association with little or no hepatic enlargement, is suggestive of this affection. Fatty stools—in the absence of diarrhea or jaundice—together with indications of interference with the digestion of albuminoids, are valuable confirmatory evidence of deficiency or absence of the pancreatic secretion."

13. **Peritonitis.**—Smith's article is in effect a plea for operative treatment of peritonitis; he thinks the high mortality in

operative cases has been due to late operations. He believes in the use of flushing with saline solution and drainage. He says that in these cases the abdominal incision should be left as open as is consistent with retaining the abdominal contents. Silkworm gut sutures to the peritoneum approximating the upper and lower edges of the incision are best, and gauze compresses may be tucked loosely into the gaping wound to hold back the intestines until adhesions have formed. The dressing can be secured with adhesive strips and a many-tailed bandage. After the conclusion of the operative work he dilates the anal sphincter to make the later escape of the flatus as easy as possible. His post-operative treatment consists in the use of strychnia hypodermically in severe cases, rectal flushing with salt solution, morphin to relieve pain, stimulants, and whisky given as soon as it can be borne by the stomach. After the fourth or fifth day calomel may be given in hourly half-grain doses with sodium bicarbonate, Rochelle salts or compound jalap powder as a laxative, followed by turpentine and glycerin enema if required. Nourishment by the mouth is absolutely forbidden for three to six days after operation, and he begins it cautiously with meat broths, withholding milk until the second week in convalescence. The point he specially wishes to emphasize is the surgical procedure, which he thinks we should follow, in view of the fact that acute general peritonitis, as a rule, proves to be fatal when neither irrigation or drainage is employed.

16. **Suggestions to Anesthetizers.**—The following is a recapitulation of Simpson's suggestions in this article: 1. Give the patient your undivided attention. 2. Give the anesthetic slowly. 3. Keep the patient's lower jaw forward. 4. Give the anesthetic most cautiously (especially chloroform) when the stage of unconsciousness is at hand. 5. During deep anesthesia watch particularly the respiration, but also the pulse, eye and color. 6. The rolling of the eyeballs from side to side is the first and most easily observed indication of returning consciousness.

17. **Adrenalin in Anesthetic Solutions.**—From experiments, Elsberg is convinced that the addition of adrenalin chlorid in proportion of 1 to 5000 to 1 to 20,000 solution for local anesthesia has a distinct value in minor operative surgery in that it almost entirely does away with the oozing of blood from the wound. As adrenalin is a cardiac stimulant, he says it has the additional advantage that it will counteract the depressing effect of the eucain or cocain; because it keeps the local blood vessels firmly contracted for a number of hours, it will prevent the congestion, and hence the pain which is so apt to follow after the anesthetic effects have worn off.

19. **Early Diagnosis of Pulmonary Tuberculosis.**—The importance of the physician informing the patient as to his condition is the first point noted by Stubbert, who maintains that inasmuch as the patient should co-operate in the treatment this has an important bearing on the outcome. He considers the predisposing factors—the heredity, scrofulosis, defective or insufficient food associated with imperfect ventilation, grief, overwork, frequently recurring catarrh, damp localities, race, shape of the chest, traumatism, former pulmonic or pleuritic disease, chronic catarrhal troubles. Vital capacity, as defined by H. P. Loomis, when found below the normal standard, is a strong predisposing factor. Gradual loss of weight and increased activity of heart action should always lead to a chest examination. Other early symptoms he mentions are a slight hacking cough with or without sputum (first eliminating laryngeal or pharyngeal causes), slight night sweats, slight evening rise of temperature, loss of appetite, weight, hoarseness, tired feeling in the afternoon, blood spitting and even small hemorrhages. A rapid pulse accompanying some of the above-mentioned symptoms, always over 100 or 110, should lead us to suspect tuberculosis. The physical signs should be looked for carefully. Slight flattening of the supra- and infra-clavicular regions with prominent clavicle may be present. Expansion is a rather indefinite symptom. It is well to observe posteriorly as well as anteriorly, but he thinks that chest expansion should not be relied upon, for consolidation may occur before it is prominent. Percussion signs are not always distinct. In most cases, however, we will get a slightly high-pitched percussion note in the infra-clavicular space and increase of vocal resonance with prolonged expiration. If we have with this a bronchovesicular rather than a bronchial breathing we should suspect tuberculosis. Occasionally we find a cog-wheel respiration, but not as a rule in the early stages. The râles in the early stage are rarely heard. As many of the incipient cases present no expectoration whatever, and if sputum exists bacilli may be absent, bacterial examination of the sputum loses much of its value as a negative factor. If there should be a slight expectoration with bacilli we need go no further before making the diagnosis, but finding none in the sputum is no reliable guide. The tuberculin test he has not found to fill our expectations as a diagnostic test, for it fails in some cases and reactions occur in some syphilitic cases. Examination of the larynx may or may not give us definite information; a slight anemic condition is what may be expected. The blood examination, according to the Loomis Sanatorium experience, shows that pure tubercular disease has very little effect on the blood and that the diplococcus lanceolatus associated with the tubercle bacilli was the primary cause of severe anemia in sixty cases. In tubercular diarrhea it is the drain on the body albuminoids and not the tuberculosis which is the cause of the severe chloranemia. Any slight rise in temperature has not the slightest effect on the hemoglobin. The temperature we get in mixed infection drains the red blood corpuscles of their vitality and lowers their number. In mixed infection with cavity and moist râles and secondary anemia with leucocytosis 75 cases showed the polymorphonuclear cells increased at the expense of the leucocytes, the latter being of the large variety. But when the moist râles disappear and the cavity dries up, the leucocytes disappear. The blood of pulmonary hemorrhages does not show any nucleated red cells. The perfectly normal blood, accompanied by loss of weight and other rational symptoms, should not negatively effect the diagnosis of tuberculosis. The Roentgen rays are mentioned as a valuable test, and he gives special details as to their findings and method. A more or less restricted action of the diaphragm is noticed as an invaluable indication of incipient phthisis. As regards treatment, he remarks that the upper air-passages should always be looked into, as lesions of more or less severity generally exist there. The anemia should be corrected. Hydrotherapy is a valuable factor in the treatment, and exposure to parallel rays from a powerful arc light, followed by static electricity in the form of negative insulation, appears in many instances to improve the nutrition and increase the hemoglobin. Hot-air inhalations and cold sprays are valuable, and there seems to be evidence that the anti-tuberculin serum has some value. Especial attention should be paid to the diet and the condition of the stomach should be looked after, as gastritis and dilatation are common in these cases. He thinks that siphon irrigation and sometimes the Einhorn method of faradization is often imperatively demanded. He suggests that the injudicious use of drugs is often damaging in this particular regard.

22. **The Eosinophile Count.**—Noticing a statement in one of the medical journals that human blood could be differentiated from the blood of animals by the relatively high percentage of eosinophile cells, Wightman has investigated the subject and comes to the following conclusions: 1. That in this series examined eosinophilia may occur in higher percentage in animal's blood than in human blood. 2. That the physical condition of the animal whose blood is to be compared may play an important part in the increase or decrease of eosinophiles present. 3. That in the specimens examined the polymorphonuclear counts were low and the lymphocytes high, exactly contrary to conditions present in normal human blood. 4. That the eosinophile count is not a constant or trustworthy factor in diagnosis, but, on the other hand, is very unreliable and unsatisfactory; and, finally, 5. As a comparative test the eosinophile count is a negative quantity.

23. **Five Maine Murders.**—Thayer's histories of the cases here noticed and analysis of the facts of criminal medical jurisprudence in Maine show that the plea of insanity has very little effect in that state. Insanity there has never been

a cloak for homicide. Within the last tweny-five years there have been at least five cases of homicide in which the doer of the act has been insane before and after he did it, and there is at least a high degree of probability that the act itself was the product of his insanity. Nevertheless, these men have been convicted. These convictions are to be attributed in part to the explicit, lucid, archaic, and rigorous rulings of the courts. The practical working is that in Maine the "only proper legal criterion is to concede irresponsibility only to idiots and maniacs." He thinks the realization of these facts on the part of the courts, the prosecuting officials and the public, together with increasingly accurate knowledge of the nature of mental disease, must inevitably lead to verdicts more just, scientific and humane.

24. **Abdominal Pain.**—Richardson's article is finished in this issue. His conclusions are as follows: When a patient has been siezed with sudden severe abdominal pain, 1. The pain should not be masked by opiates before the surgeon has an opportunity to see the case. 2. The previous history, accompanying symptoms and physical signs must be carefully considered. 3. Careful examination of the thorax and abdomen in all cases of pain should never be omitted. 4. When hemorrhage is suspected, the abdomen should always be explored. If the patient is in collapse and the pulse apparently too weak to allow the patient to undergo exploration, preliminary infusion of salt solution should be made into the veins or under the skin. 5. When the pain is exeruciating and the abdomen shows signs of infection, exploration should be made at the earliest possible moment. 6. The seat of the initial pain, as described by the patient and his friends, is a good guide to the incision when, from other symptoms, the surgeon is in doubt. 7. The history and signs other than pain must be relied upon for exact or reasonably positive diagnosis. 8. When some of the rarer abdominal lesions are suspected, exploration should nevertheless be made. Such an exploration may be useless, but if resorted to as a routine procedure in all cases, the greatest possible number of lives would be saved. 9. When there is the least question, the genuineness of the pain should be tested as thoroughly as possible. 10. The pain of an atypical typhoid, of a pleurisy, of a pneumonia, must be guarded against. When typhoid is prevalent in a community the greatest care must be taken lest the surgeon be misled by the pain of such a case. 11. The observer must be on his guard lest he confuse the pain of simple functional disturbances with that of organic disease; he must rely upon the accessory signs of the organic lesion. 12. When in grave doubt as to the significance of pain and other symptoms, the benefit of the doubt should be given the patient by surgical exploration. 13. Finally, when no exploration is regarded as justifiable, pain should be controlled by morphia, by hypnotics, or, if necessary, by general anesthesia. With very few exceptions, however—chiefly cases of renal and biliary colic—the pain that demands general anesthesia demands operation.

25. **Diagnosis of Abdominal Disease.**—The first special point of value to which Jackson calls attention is pain. Nothing is less reliable, but every attack of pain must receive our most careful attention, though it may not be a symptom of serious import. Nausea and vomiting are of the greatest importance and should be carefully considered in the history of any abdominal case. It is rare to find any acute disturbance of the peritoneum without their occurrence. On the other hand these disturbances are not so common in colic or abdominal disturbances from other causes. Another point of value in the history is the occurrence of constipation, obstinate in character, in a patient who has not previously suffered from this symptom. Among the physical symptoms the general appearance may be of much importance. The bright mental condition is in strong contrast to the hebetude seen in many febrile conditions, the pinched and anxious facies, the absence of, or the limited excursion of diaphragmatic respiration and the bending of the knees to relieve extra abdominal pressure. Exploration should be made if there is any suspicion of tumor. A pulsation transmitted to the abdominal wall at or below the umbilicus is always suspicious of tumors interfering with the aorta. We should always look also for peristaltic contraction of the bowel in the diagnosis of intestinal obstruction. When present it is a sign of much importance. It is not usually difficult to make a diagnosis of excessive fat in the abdominal wall, but mistakes are possible and the simplest method of determining is to take up within the two hands as much as possible, which must be subcutaneous. Tenderness must be sharply distinguished from pain and is of paramount importance. When spasm is added the surgeon must have strong evidence to the contrary to justify him that there is no acute local inflammation. In many cases of appendicitis the evidence of tenderness and spasm at McBurney's point clinches the diagnosis. There is one place in the epigastrium, just below the xiphoid cartilage, where there is always tenderness or a little discomfort, and this should be remembered. Spasm is of even greater importance than tenderness, and the absence of these two symptoms in cases of colic or abdominal pain are most reassuring that the trouble is not dependent upon any inflammatory process. In children it is always the best plan to have the mother or nurse press fairly hard in various parts of the abdomen, and especially over the appendix, to determine whether there is tenderness. We must remember that hard masses of feces may simulate tumors and are often retained in the intestine, though the patient may have had many small loose dejections. A simple diagnostic method of much value in determining between small pleural effusions and enlargement of the liver, or some inflammatory process between the liver and the diaphragm, subdiaphragmatic abscess, is to determine accurately by percussion the upper line of dulness in the chest wall. Then let the patient take a full inspiration and hold the breath. Continue a light regular percussion while the patient inhales and note carefully whether there is any change in the percussion note during the full inspiration. If the dulness is due to fluid in the pleural sac there will be but little change in the upper area of dulness, whereas, if the mass be beneath the diaphragm, good pulmonary resonance will be found at the point previously dull as the expanded lung will extend downward over the subdiaphragmatic mass. This method will usually demonstrate the presence of an enlarged liver, or the rare and always obscure condition of acute suppuration between the liver and diaphragm. He does not think this method is in common use, though it is of much value. The sign which to his mind is of greatest importance in the diagnosis of intestinal obstruction, is the significance of an empty rectum as suggestive of intestinal obstruction, when there has been no movement of the bowels for several days. Of course, its value is greatly increased if, as is usually the case, cathartics and enemata have been given previously without satisfactory results. He has invariably made, since his attention was first called to this sign, rectal examination in cases of suggested bowel obstruction. The finding of blood is of great importance in corroborating the suspicion caused by the discovery that the rectum is free from feces. In consultation he often finds that no rectal examination has been made. An examination of the blood may give us important evidence from the existence of leucocytes in acute inflammatory conditions. Exceptions may occur, but not often; for instance, in severe acute septicemia in a class of cases in which rise of temperature is not found. Cases of this kind, to judge by the pulse and the general symptoms, are evidently very ill, so that the absence of leucocytosis can not lead to error if we only remember that in such cases leucocytosis may not exist. Other cases where it does not occur are rare exceptions. The blood count is of much value in the differential diagnosis of two diseases with similar symptomatology in the early stages, namely, typhoid fever and appendicitis. In the former the leucocytes are diminished, in the latter they are generally increased. Of course, the Widal reaction is of importance, and the blood count is of much value in the elimination of malaria when chills of doubtful etiology are present, but the malarial organism, if present, determines the diagnosis.

28. **Adiposis Dolorosa.**—Dercum reports two cases, one in a male and one in a female. In each case the family and personal history seemed to throw little light upon the cause. There is no mention made in the histories as to alcoholic ex-

cesses. In the man's case there was epilepsy as has been noted in one of the other cases out of the 25 that have been previously reported.

31. **Mental Defectives.**—Barr's paper emphasizes the importance of the institutional treatment for defective children. The evils of home treatment are the impossibility of cure and the evils of atavism; for, the transmission of inherited taint is certain in this class of defectives and they therefore need permanent sequestration. The public notion that asylums and training schools for this class of cases are curative is repudiated by him; there is no cure for that which is not diseased, but was originally absent. What is absent can not be replaced.

32. **Sodium Cinnamate in Tuberculosis.**—Mann reports a number of cases treated by Landerer's sodium cinnamate with benefit. He uses also in most cases strychnia, iron and other general tonics, and holds with Landerer that the process may be summed up by saying that the treatment substitutes an active, aseptic inflammation for an inactive one and the result is rapid cicatrization.

33. **Ice-Pack.**—Roos' rule for employing the ice-pack in cases of typhoid or other febrile diseases where hydrotherapy is employed is to use the thermometer frequently. If the temperature goes above 102.2 he employs the ice-pack. If the urine is negative, with no trace of renal disorder, he gives a little spiritus frumenti before and after the attack, otherwise plain hot milk is used. The mattress is covered with a couple of blankets, on top of which is placed a piece of rubber sheeting covered by another blanket. A sheet and blanket soaked in water at 70 are laid at the side of the bed, and the patient is rolled into them without exposure. A half hour later another sheet and blanket at 60 is substituted, care being taken not to expose the body during the change. At the expiration of another half hour the first sheet and blanket soaked in water at 50 are applied. At this time the axillary spaces, the arms and legs from the middle of the femur down are covered with cracked ice, packed outside the sheets. The operation is once more repeated at a temperature of 40; the entire duration of the pack being two hours. The effect is that of a sedative and general stimulant, sleep follows and the pulse is improved. This method avoids the sudden shock and rough handling of the Brand method and the consequent risk of producing perforation in cases of typhoid ulceration. He thinks no matter how much the Brand method has been valued in the past it will soon be obsolete as this method is learned and adopted by the profession.

34. **Prostatectomy.**—The method advocated by Bryson is not to open the bladder from above, nor to open the peritoneum, but to enucleate from below. The high incision through the abdominal wall into the bladder is withheld to the later stage of the operation, if it is required at all. The enucleation from below also permits a complete prostatectomy and avoids incision of the vesico-urethral isthmus, which is the most serious source of both operative and post-operative hemorrhage. The prostatic substance is entered from the urethral and not from the capsular side. If a small puncture with a blunt instrument is made just behind the ring at the apex of the gland, which requires incision as the bistoury is pushed along the groove of the staff, the finger can be pushed into the small opening, entering the prostatic tissue. The urethra slips backward longitudinally, giving room to work. The entrance is made, not on the floor, but to one or the other side of the median line, always toward the lower lateral segment and a little behind the apex. The excochleating finger is now swept around the outer portion of the overgrowth, out toward the capsule, and back toward the base, care being taken not to tear the urethra by too much force. Care should also be exercised not to tear away too much of the sides and the upper part of the urethral wall. The procedure can be repeated on both sides in the same way. In taking away the middle lobe, if this be found necessary, we may have to tear away a part of the floor of the urethra, leaving a tongue or flap of mucous membrane which we must avoid doubling back into the bladder in the introduction of the drainage tube, subsequently. The little removal of the urethral floor has not done, in his experience, any special damage, but we must be very careful not to remove any of the roof of the canal and as little of the sides as possible. The drainage tube being introduced through an intact sphincter vesicæ, hemorrhage is completely controlled by packing around it or by irrigation with hot boric acid solution. The tube should be hard so as not to be collapsed by the packing. It is important to leave the capsule of the prostate intact. In his own work the mortality has been reduced from 25 to a little over 6 per cent. The advantages are summed up in: Avoidance of epicystotomy with its attendant evils and dangers; avoidance of opening the prostatic capsule and interference with the vesico-prostatic capsule and plexus; excochleation of the overgrowths from the urethral side. Avoidance of incising the vesical outlet; adoption of the prevesical incision for the purpose of bringing the structures within reach of the finger working in the perineal wound; adequacy of drainage; efficiency of hemostasis, both operative and post-operative.

38. **Artificial Infant Feeding.**—Visanska calls attention to the difference between human and cow's milk and remarks that he has adopted Professor Seibert's method of feeding babies according to weight and not according to age, and gives his reasons for the same. If a child three months old weighs 18 pounds, as it may, while the normal weight for such age is only 12 pounds, and the latter weight is taken as a guide, some five or six pounds of the child will not be properly nourished. He advocates the use of Seibert's formula (*Archives of Pediatrics*, July, 1894), and believes in the filtration of milk through a layer of absorbent cotton as devised by that authority. He gives a chart of his own device for feeding the infant and thinks it has certain advantages. The preparations on the market, he claims, produce an unhealthy growth and are not reliable. Food can be insufficient for the child in two ways, either by too limited amount or by lack of elements essential to nutrition or given in a form not adapted to the feeble digestive powers of infancy.

39. **Eye Defects in Children.**—The eye defects which may cause apparent mental dulness and deficiency in children are reviewed by Bull, who gives them in the order of their frequency. The first is hypermetropia, which makes the patient incapable of sustained accommodative effort for near objects for any length of time, producing pain, headache and incapacity of the child for ordinary close work. The next most frequent is astigmatism which is often the cause of the unjust charge of dulness. This may lead in neurotic children to various apparently irrelevant reflexes and even epileptiform attacks. The third refractive error and the most distressing one is myopia. The mental evolution of the child suffering from recognized or defective myopia is instructive—unable to see what his companions see and jeered at for his failure, he becomes introspective and perhaps perverted in his tastes. Muscular anomalies may also give rise to some difficulties. The effects of squint are also usually associated with some refractive error. Other special defects, which rarely occur, such as congenital cataract lens dislocation, lack of pigment, coloboma and aniridia, are mentioned; in conclusion, he calls attention to an important and altogether interesting defect which has nothing to do with the eye as an organ of vision, but rather with the visual centers in the brain, viz., congenital word-blindness, of which cases have been reported by Hinshelwood and Nettleship. In these, changes have been found in the left supramarginal convolution and angular gyrus. It should not follow because this has been little noticed heretofore that it is necessarily rare. It may be moderately frequent. Its importance from an educational standpoint is obvious. If the case is curable the remedy will probably be found in methodical instruction in reading begun at as early an age as possible. If it is irremediable the sooner this is ascertained the better.

41.—See abstract in THE JOURNAL of January 4, p. 53.

42.—Ibid.

48. **Typhoid Fever.**—The treatment of typhoid fever here recommended by Boggess consists first of all in diet. He thinks more patients are lost by underfeeding than by overfeeding. The old idea that milk is the sheet anchor must be discarded. He believes it a bad food, but he does believe in buttermilk, and he would give his patients four to eight eggs

in one form or another daily with a quart of buttermilk and good nutritive soups. The diet can be enlarged by various custards, fruit jellies and gelatins. He gives through the disease salol, bismuth subgallate, Beta naphthol, urotropin and occasionally ichthyol, piperin and eucalyptol, with small doses of calomel. He has no fear of the use of laxatives in typhoid and never hesitates at any stage of the disease to give broken doses of calomel, Seidlitz powder, citrate of magnesia or Rochelle salts, preferably in lemon-water. The Brand treatment, while excellent, is not always practicable. He thinks we have to rely sometimes on unintelligent cold sponging or the scientific application of the cold pack. Hot packs he finds in certain cases give as good or better results and are more pleasant to the patient. He has no hesitation in using some of the antipyretics, such as phenacetin, phenalgin and acetanilid, and he insists on the patients taking all the sterile water they want. For hemorrhage he would prescribe absolute quiet and rest, withdrawing all food for from ten to twenty-four hours, hypodermic injections of morphin, cold to the abdominal surfaces, salt solution and ice water enemata. Cardiac asthenia demands alcohol, strychnia, citrate of caffein in full doses and absolute quiet.

52. **Sterilized Vellum for Prevention of Adhesions After Laparotomy.**—Cargile has employed a very delicate vellum prepared from serous membrane to interpose between surfaces prone to adhesion after laparotomy. It is used sterilized, adapts itself closely to the surfaces and is soon absorbed. So far as he has learned he has seen no mention of a similar use of this substance.

53. **Grippal Pneumonia.**—Watkins briefly describes the types of pneumonia complicating la grippe and summarizes that the typical grippal pneumonia differs from the ordinary form: 1. By the slow insidious invasion. 2. By the predominance of bronchitis. 3. The rather low, often remittent temperature. 4. The tendency to heart failure and cyanosis. 5. The frequent absence of rusty sputum. 6. Absence of critical defervescence and strong tendency to delayed resolution. 7. A tendency to wander from one lobe to another and thus involve the apex. 8. Decided fatality and infectiousness to a curiously limited degree. He advises for these cases heart tonics, the early use of stimulants, alcohol, carbonate of ammonia instead of the usual cough mixture expectorants; codein and heroin in elixir terpin hydrate for cough, caution in the use of morphin and no antipyretics of a depressing character.

60. **Cretinism.**—Koplik calls attention to a special stigma of cretins, as he has observed it, viz., the enlarged or prominent antithenar eminence and over the situation of the os pisiformis. This is present in all the cretins he has examined, but he has found it also in other degenerates. He has observed it in children not over three months of age; therefore, it can not, he thinks, be credited to an abnormal use of the hands in creeping. Besides cretins he has found it in hydrocephalic idiots and dwarfs.

61. **Malaria.**—The mild epidemic in the Foundling Hospital, described by Freeman of uncertain nature, seems to resemble prodromic malaria more closely than anything else. This diagnosis was confirmed by one typical case of malarial seizure accompanied by the presence of the plasmodium in the blood, and by the fact that all the 82 children affected recovered promptly with the use of quinin. There were pools of stagnant water adjacent to the room in which these children were during the day, but the conditions were hardly sufficient to account for the malarial attack.

63. **Hare-Lip.**—Ratchford reports a rather strange history of a family in which there were born four girls with hare-lips and cleft palates and three boys without any trace of this peculiarity. A curious fact was that the mother during pregnancy was able to foretell the sex of the children and whether or not they were to be thus deformed, at least that was her belief, and it seems to have been borne out by the facts. Whether her mental condition of depression under this conviction had anything to do with it, of course, is worthy of thought. There was a bad family history of tuberculosis on both sides, but no history of hare-lip. The mother had a high arched palate.

75. **Visual Centers.**—Spiller reports the case of an idiot in which the eyeballs were lacking and in whom the autopsy showed no optic foramina, no trace of optic nerves, chiasm or optic tracts, no sign of external geniculate body, small occipital lobes, the cuneus very small with short calcarine fissure and defective development in optic thalamus and optic radiations. The conclusions which he deduces from this interesting case are given as follows: 1. The chief primary optic center is the external geniculate body. 2. The pulvinar of the optic thalamus is also an important primary optic center. 3. The anterior colliculus of the quadrigeminal body in man has an unimportant relation to the vision. 4. The hypothalamic body, the habenula and the internal geniculate body probably are not parts of the visual system. 5. The cortex of the calcarine fissure may contain nearly the normal number of cell bodies, even though the visual system may be undeveloped. 6. The nerves to the ocular muscles and their nuclei may be developed, even though the visual system is absent. 7. Congenital spastic paraplegia may be the result of deficient formation as regards number or size of the neurons of the central motor system, even though such a deficiency may be difficult to detect by the microscope."

88. **The Technics of Nephropexy.**—Edebohls has personally examined fifty-five kidneys which he had anchored from one to eight years previously, with an average of more than three years since the intervention. Fifty were found solidly anchored; in five the attachments had stretched more or less, or the kidney had followed the movements of the lax abdominal wall, but none had become detached from anchorage. He remarks that his publications on the relations of movable kidney and appendicitis in 1895 attracted little attention at the time, but experience is confirming their correctness, and several surgeons now follow his practice of lumbar appendicectomy and right nephropexy at the same sitting when a movable kidney requires anchoring. He opens the peritoneum to the outer side of the ascending colon and follows the longitudinal bundles downward to the cecum where they join at the root of the appendix. The latter is delivered into the lumbar wound, and either inverted entire or else amputated and the stump treated by inversion without ligation. He has failed only four times in the fifty-six cases in which he has attempted lumbar appendicectomy, either from inability to find the appendix or to deliver it far enough into the wound. In these cases he supplemented the nephropexy by abdominal appendicectomy. The conviction is also gaining ground that there exists an intimate association between movable right kidney on the one hand, and cholecystitis, cholelithiasis and their sequelæ on the other. In a recent series of four nephropexies, for example, he found gallstones in two and chronic cholecystitis in the others. He therefore regards direct exploration of the appendix, gall-bladder and gall-ducts through the lumbar incision as one of the most important steps of the intervention. He has sometimes deliberately opened the peritoneum when not required for appendicectomy, for the sole purpose of making this exploration, but in certain cases he has been able to palpate the gall-bladder, gall ducts and under surface of the liver through the peritoneum without entering. His experience now includes 261 nephropexies done in 193 operations on 186 patients. All but three were women. The mortality in 846 nephropexies on record is between 1.5 and 2 per cent. His mortality was 1.55 per cent. in 193 operations. He used ether, alone or preceded by nitrous oxid, in all but four of the nephropexies. One of the latter patients was operated on under spinal cocainization and painlessly, the intervention including at one sitting right nephropexy, lumbar appendicectomy, curettage of the uterus and inguinal shortening of the round ligaments. He keeps his patients on their backs for three weeks. Acute nephritis occurred in two patients, but was attributed to the ether by the physician in one instance, and recovery was complete in six and eight weeks. Slight albuminuria and blood cells were noted in ten cases—no more than occasionally follow mere palpation of the kidney. After the latter is delivered through the incision which is carried from rib to ilium along the outer border of the erector spinæ, the whole of the fatty capsule is removed, and the kidney is then returned temporarily to its place, while the

other abdominal viscera are explored and operated on as required, after which the peritoneum is sutured. The kidney is then delivered again. The process is facilitated by moving the patient up or down on the air bolster which is placed under the abdomen. The capsule proper is then incised on the convex border and detached to a line midway between the external and internal borders of the kidney. The loose portion is then turned back like the lapel of a coat over the still attached half. Four fixation sutures are passed through both, just below and parallel with the line of junction and the long axis of the kidney, each suture enclosing 2 to 3 cm. of the capsule. The kidney is then replaced and the sutures are brought out perpendicularly through the rear wall of the abdomen. The denuded kidney is thus brought against the denuded quadratus in apposition throughout the entire length of the latter, from rib to ilium. The article is illustrated with eleven fine cuts.

90. **Ligation of Abdominal Aorta for Aneurysm.**—Morris reports the 14th case in which the abdominal aorta has been ligated. All the patients have died, but in the four cases done since antiseptic methods have prevailed, Keen's patient lived for forty-eight and Tillaux's for twenty-nine days, while Milton's died the day after operation, from anemia and shock, and death occurred in this latest case from septicemia the third day. Morris ligated the artery temporarily with a soft rubber catheter held by long clamp forceps. The patient was a colored woman, 24 years of age, with a history of aortic disease dating back four months, accompanied by much epigastric pain and vomiting. The ligature was applied about two inches below the aneurysm, one and one-half above the bifurcation of the aorta. The operation could be done in fifteen minutes, but required thirty in this case. Nine hours after operation the balance between the vital signs was restored and the patient's legs became warm. Numbness and pain in the legs required morphin. Twenty-two hours after the ligation the pulsation in the aneurysm suddenly began to diminish, and the aorta decreased so rapidly in size that in about three hours the aneurysm had apparently disappeared and the ligature was removed—twenty-seven hours after it had been applied. The pulse became rapid and irregular at first, but soon subsided to 60 with the beat regular. The pulsation in both femorals showed that circulation in the extremities was restored, with sensation and sphincter control. Patient was quiet and comfortable, but symptoms of septicemia developed and were rapidly fatal. The portions of the bowel which had lain in contact with the steel forceps had gangrened, with resulting infection of a serous collection in the vicinity. The patient was in no condition to resist it on account of weakness from lack of nourishment and ulcerative gummatous nodules found in left kidney. The case demonstrates that an aneurysm of the aorta can be made to fill with clots in this way, and that circulation may be re-established by removal of the ligature. The evidence tends to prove that the operation may be successfully accomplished in the near future. Morris appends the summaries of the thirteen other cases on record.

100. **Hemochromatic Bodies in Pernicious Anemia.**—Incited by the statement of Adami, in THE JOURNAL of Dec. 23, 1899, that the condition of hemochromatosis is doubtless of bacterial origin, Yeakel investigated the tissues from several cases of pernicious anemia and has found just what was described by Adami, "irregular clumps of stumpy ovoids," minute "diplococcoids," some of the isolated ones showing "a fine halo about them." These pigmented bodies are not all diplococcoids; some seem merely to be fragmental particles. In the other cases the same hemorrhoidal bodies were found in the tissues, the liver, pancreas, spleen and to some extent the kidneys. He made cultures from the different organs of the body, as he states in the discussion following, in two of the cases, and found almost pure cultures of colon bacilli. This bears out fully Adami's view that the colon bacilli is the cause of this condition in pernicious anemia, though Yeakel does not consider it alone conclusive.

102. **Ovarian Pain.**—Hall maintains that what is called ovarian pain is largely due to the uterus and that in many cases where the ovaries have been removed the pain experienced is reflex or sympathetic from inflamed endometrium and stenosed cervix.

103. **Astragalus Dislocation.**—Jepson reports a case in which the astragalus was not only in part comminuted, but rotated on its lateral axis, so that the surface for articulation with the tibio-fibular arch pointed toward the os calcis, and the fractured end pointed toward the tendo Achillis. Nevertheless, with considerable trouble and the severing of a number of tendons, thus running the risk of affecting the vitality of the bone, the dislocation was reduced and good results obtained. He summarizes as follows: 1. My own experience and the results of recorded cases lead me to believe that it will rarely be possible with our present knowledge and technique to bring about a reduction of a backward dislocation of the astragalus without opening the joint and bringing about a reposition of the bone by direct manipulation. 2. With our present command of aseptic surgery, I see no reason why this should not be undertaken in all cases uncomplicated by severe infection, with good prospects of securing a nearly perfect result. 3. Removal of the astragalus should be reserved for cases where the bone is completely separated from its ligamentous attachments, consequently having no adequate source of blood supply. 4. Amputation should be resorted to only in cases where the dislocation is compound and infected to a degree impossible of removal, and the patient's life jeopardized by the septic intoxication or infection.

109. **Ventrosuspension of the Uterus.**—Cousins performs an operation which he thinks is new to the profession or not yet described and which is briefly as follows: "An incision is made in the median line just above the symphysis, about an inch and a half long, or of sufficient length to admit two fingers, that the uterus may be brought up into the wound for inspection, and at the same time any adhesions present may be broken up. After having gotten the uterus and its adnexa freed and perfectly movable, I dissect away from the skin and the subcutaneous fat down to the fascia of the rectus muscle, pushing it back from the edge of the incision for about an inch and a half. I then take a sharp pair of forceps and introduce them about an inch and a quarter from the edge of the median incision, on a line with the lower angle of the abdominal incision. The forceps are then pushed through the fascia muscle and the peritoneum into the abdominal cavity. The next step of the operation is to grasp the round ligament about an inch and a half away from its uterine attachments and draw it up through the punctured wound made by the forceps through and above the external fascia of the rectus muscle. It is sutured there with catgut sutures. This procedure is repeated on the opposite side and the abdominal wound is closed with through-and-through silkworm gut sutures and a running catgut suture for the fascia of the rectus muscle." The uterus thus suspended has a space between it and the abdominal peritoneum. The outer extremity of the round ligament is put on a stretch which thus lifts the broad ligament forward and upward and suspends the ovaries. It has certain advantages, he thinks, over the Kelly operation, and though he has performed it only three times the results have been always good. It is less inconvenient to the patient, as she is allowed to be up in fourteen days and leave the hospital in two and one-half weeks.

120. **Formaldehyd.**—Howard finds formaldehyd inhalations almost a specific in scarlet fever and measles. He places a generating lamp in the room. If the gas causes irritation to the eyes and throat a little aromatic spirits of ammonia will control it, and sometimes increase the action. The room should be thoroughly ventilated several times a day and the gas regulated to suit the feelings of the patient, though they may require sometimes more than the healthy person would consider comfortable. He would also fumigate other children in the family for an hour morning and evening for a few days to prevent other cases. He also advises the inhalation use of formaldehyd in tuberculous cases. The formula which he uses is given as follows:

℞.	Formalin	℥ii	7|50
	Chloroform	℥i	3|75
	Alcohol	℥iss	45|
	Oil rose geranium	gtt. xx	1|25

This is used from a light glass inhaler or a large mouth vial, in his tuberculous cases. In debilitated patients he uses small doses of strychnia. If the bladder becomes irritated by too large or long continued doses, suspension for a time with strychnia and the use of diuretics relieves the condition.

133. **Treatment of Diphtheria.**—The treatment of diphtheria recommended by Patterson consists in the use of muriatic acid with potassium chlorate according to the following formula:

R.	Potassium chlorate	3i	3 75
	Dilute muriatic acid	3ii	7 50
	Muriated tinct. iron	3iii	11 25
	Distilled water	℥xii	360

The details of treatment are significant. As soon as the patient is seen, do not delay for the action of a cathartic or other medicine, but combat it at once by the administration of two tablespoonfuls every hour for adults, and proportionately less for children, of the above mixture. Administer it once or twice at night, with tonic doses of quinin thrice daily. He advocates mopping of the throat with a mixture of extract of pinus canadensis and phrenic acid, 10 to 15 drops, repeating it after each dose, and taking care not to wound the tender membrane. He reports that with this treatment, suggested by Dr. E. S. Gaillard, he has had remarkable success.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below.

British Medical Journal (London), February 22.

1 The Reorganization of the Army Medical Service. C. B. Ball.
2 *The Treatment of Chronic Malarial Fever by Subcutaneous Injections of Quinin Bihydrobromate. G. B. Ferguson.
3 *Should Milk Be Boiled? W. B. Ransom.
4 *Remarks on the Relation of Human and Bovine Tuberculosis. C. H. Cattle.
5 General Hospitals and Pulmonary Consumption. Alexander Robertson.
6 *The Origin of the Modern Treatment of Pulmonary Consumption. A. T. Tucker Wise.
7 Hydrogen Peroxid in the Treatment of Lupus Vulgaris and Tuberculous Abscess. Charles H. Gunson.
8 *On the Effects of Forced Feeding in Cases of Pulmonary Tuberculosis and in Normal Individuals. Noel D. Bardswell, Francis W. Goodbody and John E. Chapman.

The Lancet (London), February 22.

9 *The General Pathology of Tumors. Charles P. White.
10 *The Hospital Ships of the Metropolitan Asylums Board and the Dissemination of Smallpox. John C. Thresh.
11 On Cleft Palate. (Concluded.) W. Arbuthnot Lane.
12 *Burns from Celluloid. Alexander Ogston.
13 Tetanus Following Revaccination on the Leg; Recovery After Prolonged Administration of Chloral Hydrate. William Dindlay and John W. Findlay.
14 Notes of 15 Cases of Operation for Internal Derangement of the Knee-joint. J. M. Cotterill.
15 Rheumatism as a Cause of Epistaxis in Children. Sydney Phillips.

Journal of Tropical Medicine (London), February 15.

16 Sleeping Sickness in Uganda. Patrick Manson.
17 *Hemorrhagic Pancreatitis in Acute Malaria. W. G. Ross and C. W. Daniels.
18 Marginal Ulceration of the Gums Occurring Among Natives of East Central Africa. Neil Macvicar.
19 Malarial Fever as Met with in the Great Lake Region of Central Africa. (Continued.) Albert R. Cook.

Annales de l'Institut Pasteur (Paris), January.

20 *Study of the Trypanosoma of the Tsetse Fly Disease. A. Laveran and F. Mesnil (Paris).—"Recherches morph. et exp. sur le trypanosome de la maladie de la mouche tsétsé."
21 *Study of Cattle Plague. Filtration of the Virus. Nicolle and Adil-Bey.—"Etudes sur la peste bovine. Expériences sur la filtration du virus."
22 Fermented Milk as Food—The Leben of Egypt. E. Rist (Paris) and J. Khoury (Montpellier).—"Etudes sur un lait fermenté comestible. Le Leben d'Egypte."
23 *Special Rôle of Carbohydrates in Utilization of Insoluble Salts in the Organism. L. Vaudin.—"Sur un rôle particulier des hydrates de carbone dans l'utilisation des sels insolubles par l'organisme."
24 Normal Serum in Pneumo-enteritis. S. Saltykow.—"Sérum normal dans la pneumo-entérite."

Bulletin de l'Acad. de Med. (Paris), February 11.

25 Arsenic as Specific Treatment of Malarial Fevers. A. Gautier.—"Sur un traitement spécifique très puissant des fièvres paludéennes."
26 *Chloroform Anesthesia in Heart Disease. H. Huchard (Paris).—"Le chloroforme chez les cardiaques."
27 *Potato in the Treatment of Diabetes Mellitus. A. Mossé.—"La cure de pommes de terre dans les diabètes sucrés."

Bulletin Medical (Paris), January 25 to February 5.

28 Traumatic Detachment of the Epiphyses. Kirmisson (Paris).—"Sur les décollements épiphysaires traumatiques."
29 Clinical and Practical Index of the French Climatic Resorts. A. Vidal (Grasse), Baréty (Nice), and Herard de Bessé (Beaulieu).—"Index clinique et pratique des principales stations climatériques françaises."
30 *Expectation During the Period of Dilatation in Deformed Pelves. Pinard (Paris).—"De l'expectation pendant la période de dilatation dans les bassins limites."

Gazette Hebd. de Med. et de Chir. (Paris), January 23 to February 6.

31 *Two Cases of Vesicular Mole with Severe Vomiting. Pinatelle (Lyons).—"Deux cas de môle hydatiforme avec vomissements graves."
32 Paralysis in Lead Poisoning. Debove (Paris).—"Les paralysies saturnines."
33 Review of Recent Thèses at Paris, Nancy and Toulouse.—"Revue des Thèses, 1901-1902.
34 Record of Operations at the Pitié in 1901. Terrier (Paris).—"Statistique des opérations faites a l'hôpital de la Pitié, 1901."

Gazette des Hop. (Paris), January 25 to February 4.

35 The Kidney in Tuberculosis. E. Guihal (Paris).—"Le rein des tuberculeux. Etude clinique."
36 Traumatic Rupture of Spleen and Recovery After Tardy Splenectomy. Coville (Orleans).—"Rupture traum. de la rate avec hémorrhagie lente. Splénectomie tardive. Guérison."
37 Lavage of the Intestines in Children. L. Babonneix (Paris).—"Les lavages de l'intestin chez l'enfant."
38 Cysts of the Vagina. G. Marion (Paris).—"Les kystes du vagin."
39 *Treatment of Surgical Tuberculosis with the High Frequency Current. L. Imbert (Montpellier).—"Note sur le traitement des tub. chir. par les courants de haute fréquence."
40 *Primary Cutaneous Actinomycosis of the Face. L. Pourpre (Val de Grace).—"De l'actinomycose cutanée primitive de la face."
41 *Recurring Traumatic Leg Ulcer Cured by Stretching the Sciatic Nerve and Partial Resection of the Saphena. Thévenot (Lyons).—"Elongation du sciatique poplité ext. et resection partielle du saphène ext. pour un ulcère traum. récidivant de la jambe droite à forme névralgique. Guérison."

Revue de Chirurgie (Paris), February.

42 *Resection of the Internal Pudic Nerve in Vaginismus and Pruritus of the Vulva. E. Tavel (Berne).—"Résection du nerf honteux interne dans le vaginisme et le prurit de la vulve."
43 *Gastrostomy. F. Terrier and A. Gosset (Paris).—"Note sur la gastrostomie."
44 *Cicatricial Stenosis of the Pylorus Consecutive to Ingestion of Caustics. Quénu and J. Petit (Paris).—Des sténoses cicatricielles du pylore consécutives à l'ingestion de liquides caustiques."
45 *Clinical Diagnosis by Means of Cytology, Cryoscopy and Hematolysis in Surgical Effusions. C. Juillard (Geneva).—"De l'utilisation clinique de la cytologie, la cryoscopie et l'hématolyse dans les épanchements de quelques séreuses chir. (Séreuses vaginale, articulaires, sac herniaire.)"

Revue Mens. des Mal de l'Enfance (Paris), January.

46 Riga's Disease: Cachectic Aphtha. E. Audard (Paris).—"La maladie de Riga."
47 Congenital Stridor. Rocaz.—"Note sur deux cas de stridor congénital."
48 *Treatment of Whooping Cough by Formol. Lamallerée (Varennes).—"La coqueluche et son traitement par le formol."

Semaine Medicale (Paris), February 5 and 12.

49 Smallpox in England During the Last Fifty Years. A. Gubb (London).—"La variole en Angleterre depuis un demi-siècle et les enseignements qu'on peut en tirer."
50 *Phlebitis in the Course of Secondary Manifestations of Syphilis. Oettinger (Paris).—"De la phlébite au cours des accidents secondaires de la syphilis."
51 Ocular Affection Caused by Manipulation of Podophyllin. Rocca-Sera (Paris).—"Une affection particulière des yeux provoquée par la manipulation du podophyllin."

Centralblatt f. Chir. (Leipsic), February 15 and 22.

52 McGraw's Method of Gastro-enterostomy Combined with Enterostomy with Aid of an Elastic Ligature. Willy Meyer (New York).—"Gastroenterostomie kombinirt mit Enterostomie, ausgeführt mit Hilfe der elastischen Ligatur."
53 Parasitic Origin of Carcinoma and Sarcoma. M. Schuller.—"Zur parasitären Entstehung von Krebs und Sarkom."

Centralblatt f. d. Grenzgebiete (Jena), February 17.

54 *Late Publications on Prophylaxis and Treatment of Puerperal Sepsis. A. Bass (Vienna).—"Neueres über die Prophylaxe und Therapie der puerperalen Sepsis." (Concluded from Nos. 1 and 2.)

Deutsche Med. Wochenschrift (Leipsic), February 13.

55 In Honor of Franz König's 70th Birthday. O. Hildebrand (Basle).—"Zum siebenzigsten Geburtstage Franz König's."
56 *Treatment of Peritonitis Due to Spontaneous Rupture of Gall-Bladder Containing Stones. Fritz König (Altona).—"Ueber die durch Spontanruptur der steinhaltigen Gallenblase in die freie Bauchhöhle bedingte Peritonitis und ihre Behandlung."
57 *Death Under Chloroform from Paralysis of the Heart. L. Laqueur (Strassburg).—"Ueber Chloroformtod durch Herzlähmung."

58 *Infection and Auto-Infection. A. Wassermann (Berlin).—"Infektion und Autoinfektion."

February 20.

59 In Honor of Adolf Kussmaul's 80th Birthday. Ch. Bäumler (Freiburg, i. B.).—"Adolf Kussmaul."
60. *Renal Colic, Renal Hemorrhage and Nephritis. H. Senator (Berlin).—"Nierenkolik, Nierenblutung und Nephritis."
61 *Tetanus Germs in Gelatin. E. Levy and H. Bruns (Strassburg).—"Ueber den Gehalt der käuflichen Gelatine an Tetanuskeimen."
62 *Clinical Utilization of Agglutination of Tubercle Bacilli. E. Rumpf (Friedrichsheim) and L. Guinard (Lyons).—"Ueber die Agglutination der Tuberkelbazillen und die Verwerthung dieser Agglutination."
63 Substitution of Paralyzed Quadriceps Femoris by Flexor Muscles of the Leg. F. Krause (Berlin).—"Ersatz des gelähmten Quadriceps femoris durch die Flexoren des Unterschenkels. (Concluded from No. 7.)
64 Treatment of Hemorrhoids by Arsonvalization. L. Stembo (Wilna).—"Ueber Behandlung der Hämorrhoiden mittels Arsonvalisation."

Fortschritte der Medicin (Berlin), January 1 to 22.

65 Hemolytic Properties of Serous Fluids. H. Strauss and W. Wolff (Berlin).—"Ueber das haemolytische Verhalten seröser Flüssigkeiten."
66 Roentgen Treatment of Skin Diseases; Collective Review. A. Gassmann (Leukerbad-Wallis).—"Die Behandlung der Hautkrankheiten mittelst Roentgenstrahlen."
67 *Simple Method of Preserving Specimens for Microscopic Clinical Diagnosis. R. Rohnstein (Berlin).—"Eine einfache Conservirungsmethode."
68 Forman and Its Efficacy in Catarrhal Affections. H. Suchannek (Zurich).—"Ueber Forman."
69 Progress in Treatment of Malignant Disease of the Uterus; Collective Review. G. Bamberg (Berlin).—"Fortschritte in der Behandlung des Uteruskrebses."

Monatshefte f. Prakt. Derm. (Hamburg), January 1 and 15.

70 Hereditary Keratoma. R. Bergh (Copenhagen).—"Fall von Keratoma hereditarium."
71 Plasma Cells. A. Pappenheim.—"Nachträgliches zur Plasmazellenfrage."
72 Mercurial Treatment of Tabes. M. Bockhart (Wiesbaden).—"Ueber die Merkurialbehandlung der Tabeskranken."
73 *Treatment of Nocturnal Enuresis and Pollutions. M. Porosz (Budapest).—"Bettnässen—Schlafpollutionen. Analogie."

Muenchener Med. Wochenschrift, February 18.

74 *Hypophrenic Pains and Neuroses of the Celiac Plexus. F. A. Hoffmann (Leipsic).—"Ueber hypophrenische Schmerzen und Neurose des Plexus Coeliacus."
75 *New Test of Lungs for Forensic Cases. Placzek (Berlin).—"Eine neue Lungenprobe."
76 Treatment of Phimosis. F. Wenzel (Bonn).—"Zur Behandlung der Phimose."
77 In Honor of Adolf Kussmaul's 80th Birthday. L. Edinger.
78 Comparative Study of Coagulation of Casein by Rennet and Lactoserum. P. T. Müller (Graz).—"Vergleichende Studien über die Gerinnung des Caseins durch Lab und Laktoserum."
79 *Dietetic Treatment of Stomach and Intestinal Affections. A. Schmidt (Bonn).—"Beitraege z. Diätotherapie bei Magen- und Darmkrankheiten." (Concluded from No. 6.)
80 *Statistical Study of the Consequences of Lues. M. Matthes (Jena).—"Statistische Untersuchungen über die Folgen der Lues." (Concluded from No. 6.)

Schmidt's Jahrbuecher (Leipsic), January.

81 Achievements in Physiology in 1900. R. Tigerstedt (Helsingfors).—"Bericht über die Leistungen in der Physiologie im Jahre 1900."
82 Recent Works on Tabes. P. J. Möbius (Leipsic).—"Neuere Beobachtungen über die Tabes."

Wiener Klin. Wochenschrift, February 13.

83 *Study of Eclampsia Cases. J. v. Braitenberg (Innsbruck).—"Beitrag zur Casuistik der Eklampsie."
84 Action of Urotropin in Typhoid Bacteriuria. E. Fuchs (Prague).—"Zur Wirkung des Urotropins bei Typhus-bacteriurie."

El Siglo Medico (Madrid), January 2 to February 2.

85 Measles and the Phases of the Moon. De Agreda (San Roman).—"Influencia de las fases lunares en una epidemia sarampionosa."
85½ Treatment of Congenital Phimosis. C. Negreto (Madrid).—"Algo sobre el fimosis congénito."
86 *Brown-Séquard's Injections in Treatment of Atrophy of Optic Disc. B. Castresana (Madrid).—"De las inyecciones de Brown-Séquard como tratamiento de la atrofia papilar."
87 Gastric Ulcer Due to Disturbances in Circulation. A. M. Perujo (Madrid).—"Algunas consideraciones sobre la ulcera del estomago."
88 *Tolerance of Strychnin. B. G. Alvarez (Madrid).—"Nota util al estudio de la estricnina."
89 Glycosuria and Diabetes. J. Calvo y Martin (Madrid).—"Apuntes acerca de la glucosuria y la diabetes."

Gazzetta Med. di Roma, January.

90 Success of Feristolo in Treatment of Pulmonary Tuberculosis. E. Secreti (Rome).—"Resultati terap. dei Feristolo nella tuberculosis polmonare."

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2. **Quinin Bihydrobromate in Malaria.**—Ferguson has met with a number of cases in which quinin taken by the mouth seemed inefficient, and he has experimented with various salts of quinin for hypodermic use and finally hit upon bihydrobromate or acid hydrobromate of quinin, which dissolves readily in six parts of pure water. It is a perfectly stable salt, more reliable, he thinks, than any other, and probably more unirritating. He uses it usually by injecting 3 gr. of the drug dissolved in 20 minims of pure warm water under the skin of the upper arm, thigh, abdomen, or elsewhere, on alternate days. He keeps a syringe solely for this purpose, disinfects the syringe and the patient's skin with a strong carbolic lotion and carefully disinfects his own hands, besides carefully sterilizing the needle in the flame. He thinks it well to boil the solution every time it is used. With these precautions, he considers there need be no fear of tetanus even in the tropics. He thinks that very few or no patients with malaria can resist six doses of 3 gr. each of quinin bihydrobromate. Some of his patients have been cured in three doses; none of them required more than six injections.

3. **The Boiling of Milk.**—Ransom maintains the importance of boiling milk or sterilizing it for infant food. He says there is no sound evidence to show that milk raised to the boiling point, that is 110 C., or 233 F., or to a temperature of boiling water for ten minutes or a quarter of an hour, suffers any diminution of its nutritive qualities. Neither is it probable that if consumed within twenty-four hours after heating that it will cause infantile scurvy. The same is true of Pasteurized milk heated to 80 or 85 C. None of these methods render the milk absolutely sterile, but they do kill most pathogenic microbes such as those of tuberculosis, cholera, diphtheria and typhoid, and if the milk be drunk within twelve hours of heating, few or no spores will have developed. Pasteurization, he thinks, is less effective than boiling. In times of epidemic summer diarrhea the heating should be prolonged for at least half an hour and the milk drunk within a few hours, or subjected again to the process as the spores of the bacillus sporogenes enteritidis are very resistant. Under all circumstances milk, raw or sterilized, should be drunk as fresh as possible to diminish the liability to nutritional diseases. But it is his belief that infants who live wholly or mainly on milk, as at present supplied, should never be exposed to the dangers lurking in the raw milk.

4. **Human and Bovine Tuberculosis.**—After reviewing the evidences Cattle concludes that we can not as yet deny the possibility of infection by milk, but enough has been said, he thinks, to show that the assumption that the frequency of tuberculosis in early life is chiefly due to tuberculous milk is in one direction too narrow, and in another erroneous. The exclusive milk theory will cause us to ignore the greater incidence of tuberculosis on the lungs than on the bowels of young children, and it fails also to take account of the other sources of infection. There is no doubt that certain infantile diseases like measles, whooping cough, bronchitis, bronchopneumonia, etc., are powerful predisposing causes to tuberculosis mortality. They leave behind them constitutional weakness, respiratory catarrh, and often intestinal catarrh as well, and the widely disseminated bacilli of human tuberculosis gain a footing, attaching themselves to the most suitable organs, in the majority of cases the lungs and their related glands; in other cases to the intestines, ear or neck glands. Milk may be responsible for some cases, but the fact that thoracic tuberculosis is so common at an early age suggests the conclusion that human bacilli, inhaled or swallowed, mixed with the bodily secretions or with food, is the cause of chest trouble in one case and abdominal in another. The bulk of evidence tends to show that milk is not highly infective when diluted with the milk of healthy cows, and that some persons show a much higher degree of susceptibility than others.

6. **The Open-Air Treatment of Consumption.**—Wise brings forward evidence to show that the open-air treatment of consumption was carried out by Bodington in England in 1835, in spite of much opposition and with great success. He claims for him the origin of this method.

8. **Forced Feeding in Tuberculosis.**—In the conclusion of their report the committee summarize as follows: "1. That

since very large diet gave worse results than those of more moderate amount, the indiscriminate stuffing of all tuberculous patients should be replaced by systematic dieting. The diets as regards amounts and constitution should be determined in each case after due consideration has been given to the respective conditions as regards: *a*, the activity and extent of disease; *b*, amount below weight; *c*, digestive capability; and *d*, to some extent, personal dietetic likes and dislikes. 2. That in view of the bad effects which overfeeding gave rise to in the normal individuals, great care should be taken in the selection of a diet for patients who, as the result of treatment, have reached or passed their highest known weights. When this regain of weight is associated with arrested disease, the original diet found suitable for a person very considerably underweight and with active lesions, should be reconstructed more upon the lines of what would be suitable for the same person in perfect health. The observations were not sufficiently extended to allow of conclusions being drawn as to which diets gave the best results as regards the condition of the lungs; but subsequent sanatorium experience of two of us with the advantage of being able to carefully observe the course of pulmonary lesions in patients upon weighted diets, leads us to think that the lungs do not improve any more rapidly upon forced feeding than upon generous diets. Further, there is no doubt that anorexia, dyspeptic symptoms, and vomiting are much more frequently met with when working with very large diets than when more moderate amounts of food are given." They append tables of the diet and metabolism, which are of interest.

9. **Tumors.**—The third lecture by White considers the causation of tumors, the conditions of stable and unstable equilibrium, extrinsic and intrinsic causes, etc. He sums up his conclusions in the following: "1. Tumors are to be classified on a histological basis. The best mode of effecting this is to make use of the threefold basis of cells, tissues, and organs. 2. The rudiment from which a tumor springs may consist (*a*) of the structures normally present at the point of origin; (*b*) of an embryonic collection of cells such as is described by Cohnheim; or (*c*) of tissues of new formation, the result either of an inflammatory condition or of previous tumor formation. 3. Extrinsic factors play a part in tumor causation, but are not the determining factors—that is, the occurrence or non-occurrence of a tumor does not depend on extrinsic factors. In particular, the parasite theory is shown not to stand a critical investigation. 4. The determining factor in tumor causation is to be found in the intrinsic factors. 5. This determining factor consists in the existence of a condition of unstable equilibrium between the intercellular forces, so that proliferation once started is progressive and is not limited by the resistance of the surrounding tissues. 6. The causes of this instability are many and various and may be either intrinsic or extrinsic. 7. Proliferation having started, the cells acquire the habit of growth—that is, the power of independent proliferation which enables them to proliferate in parts of the body in which the condition of equilibrium is stable. 8. Tumors grow by the proliferation of their own cells. 9. Tumors do not invariably continue to increase without limit. Under certain circumstances they may cease to grow, and may diminish in size or even disappear completely. 10. Tumor formation is not to be regarded as an isolated process but is to be considered as one of a group of progressive processes with which it is closely allied. Still less must one form of tumor, such as carcinoma, be considered apart from the others." White remarks in regard to the treatment, suggesting that the removal of the extrinsic factors such as irritation, etc., should be attended to, and makes a further suggestion based on the excessive glycogen secretion of malignant tumors. The origin of this substance in tumors has not been investigated so fully, but probably the same two sources, carbohydrates and proteids of the body, are available as in diabetes. An examination of the quantity of nitrogen excreted in the urine should be of assistance in determining this point, but he has not learned of any systematic investigation in this direction. The urine in malignant disease has not received the attention that it deserves. The presence of wasting and cachexia would seem to show that the proteids of the body are broken up, and it is very likely that glycogen arises, in part at least, from the destruction of proteid matter. If this is true we can not expect much from the carbohydrate-free diet since the body proteids would still remain as a source of glycogen. It is well known that malignant disease is very rarely met with in association with diabetes, and we know also that in acute diabetes wounds heal with great difficulty. The explanation of this is probably that the glycogen which is necessary for the proliferation of the cell is continuously being removed from the body as glucose. It is permissible then to think that by setting up an artificial glycosuria we could remove the glycogen as fast as it is formed and so prevent it being available for supplying the energy necessary for the proliferation of the tumor. Such glycosuria may be set up by giving certain drugs such as phloridzin. This is a point worthy of investigation by therapeutists, but White does not expect much from such a treatment, because the drug would remove the glycogen from the normal tissues as well as from the abnormal, and it would be of little use to hinder the progress of a tumor if the surrounding tissues could not take advantage of the occasion by reacting and absorbing it. Much depends, therefore, on the question whether the abnormal or normal tissues would yield up their glycogen more readily. To facilitate the possibility of malignant disease progressing to spontaneous cure, as sometimes has been observed, measures should be taken which will raise the enfeebled resistance of the body; thus arsenic, which has a tonic action, has been found to be of some benefit. Coley's fluid probably acts in the same way, though Butlin finds that the benefit from it is only temporary. Hygienic treatment, of course, should be regarded. In conclusion, he would urge that the investigation of the pathology of malignant disease should not be left too much to bacteriologists. There is a great field for work in the study of clinical characters of malignant disease such as temperature, urine and cachexia phenomena. There is too much tendency at the present to regard micro-organisms as everything in the cause of disease and to neglect the personal or intrinsic factors.

10. **Smallpox.**—Thresh uses the prevalence of smallpox in a small hamlet opposite the smallpox hulks in the Thames river as evidence of the air-borne theory of smallpox. There has been no communication of late years between the ships and the community, and yet the disease occurs. He thinks it possible that the infection may be carried by the air two or three miles. Of course, there is the possibility of infected sewage into the river from ships, but there is no proof of it. He thinks, however, this sewage should be treated in some way before being allowed to flow into the Thames.

12. **The Danger of Celluloid.**—Burns from celluloid are not uncommon. Ogston has collected a number of cases which he briefly reports. He has investigated the subject experimentally to see what the effect of various degrees of heat have on celluloid articles and the especial point of ignition. Celluloid is capable of being ignited at a very low temperature when exposed to radiating heat and surrounded by substances of varying conductivity. He sums up his results in the following conclusions: "1. It is evident that celluloid articles of uncertain composition and dangerously explosive quality are everywhere sold and are in constant use, and that conditions in which they may ignite in varying circumstances can not be fully inferred from experiments regarding their ignition point made in a physical laboratory. 2. Badly manufactured celluloid ignites at variable temperature, too low for it to be safely used. 3. It also follows, I consider, that restrictions should be imposed upon the sale of all such articles which do not sustain, without ignition, a temperature equal to that sustained by well-manufactured celluloid. 4. It is worthy of consideration whether all celluloid articles of personal wear and such others as might give rise to fires ought not to be compelled to have the word "ignitable" conspicuously imprinted upon them. 5. If the suggestion of the writer in *The Lancet* to render celluloid incombustible by the addition of some chemical should be practicable it would be the best solution of the difficulty, and such

an addition ought to be made compulsory by legislative enactment."

17. **Hemorrhagic Pancreatitis in Malaria.**—Ross and Daniels report a case in which a man died with acute symptoms which did not indicate a malarial source, but the postmortem showed hemorrhagic pancreatitis, together with extensive necrotic and other changes in the stomach and intestines, with a great accumulation of the malarial parasites in the pancreas and in the capillaries of the stomach and intestines; very few were found in the spleen, liver and kidneys. There was also bacterial infection of the stomach and intestines to a large extent. The malarial parasites probably had remained latent and had increased rapidly in the intestines and pancreas, until finally they produced sufficient damage to the mucosa to allow other micro-organisms present to invade it. Pain was not a noticeable symptom at any time during the disease.

20. **Study of the Trypanosoma of Tsetse Fly Disease.**—Laveran and Mesnil ascribe to the trypanosomata, the *surra* of India, the *dourine* of Hungary, Spain and Africa, the *mal de caderas* of certain portions of South America and possibly also of the United States, and the tsetse fly disease. The measures which have proved effective against one will probably prevent the others.

21. **Study of Cattle Plague. Filtration of Virus.**—Nicolle and Adil-Bey have become convinced by their studies on the invisible germ of cattle plague—which passes readily through a thin Berkefeld filter—that it lives inside the leucocytes. They relate certain peculiarities, which are only to be explained by this assumption, which may aid in the study of other unknown parasites.

23. **Special Role of Carbohydrates in Utilization of Insoluble Salts in the Organism.**—Vaudin's tests demonstrated that the saliva alone, without admixture of gastric juice, is able to form maltose and dissolve a certain proportion of the insoluble salts. About 300 gm. of salted bread were chewed by some young people and ejected into a vessel and mixed with water. In two hours maltose had been formed in the proportion of 73.15 gm. to the liter, and .98 gm. of the insoluble salts was dissolved in the fluid.

26. **Chloroform Anesthesia in Heart Disease.**—Huchard maintains that accidents from chloroform anesthesia are no more frequent in persons with lesions of the heart or aorta than in cases of other affections. A cardiac or aortic affection is, therefore, no contra-indication to chloroform under the following conditions, namely: 1, that it is not in the acute stage of an infectious process; 2, that the organ affected is not too much degenerated; 3, that it is not in the asystolic or dyspneic stage nor exhibits symptoms of adhesion of the pericardium. In case of cardiac or aortic disease, the chloroform should be administered in small, progressive and continuous doses until the lid reflex is diminished. The entire suppression of this reflex is too close to the sudden dilatation of the pupil, which is often the precursor of respiratory or cardiac syncope. Chloroform well made and well administered does not kill, Sédillot used to say, and the maxim still holds good.

27. **Potato in the Treatment of Diabetes Mellitus.**—Mossé's further experience has confirmed his previous assertions—mentioned in THE JOURNAL of January 11, p. 137—in regard to the great value of potatoes as a substitute for bread in diabetes and its complications. Ingestion of 2.2 to 3.3 lb. of potato for several successive days will usually reduce the thirst and the amount of sugar in the urine, while there is a general improvement in the different elements which make up the urologic syndrome, as well as in the general health. This effect has been attained in 23 out of 24 cases in which 2.5 to 3 times as much potato as bread formed the daily diet. The potatoes can be cooked in any way, but when baked and with butter they are usually relished most. During the spring and early summer they can be incorporated in the bread. This makes a more appetizing bread than the usual substitutes for wheat flour. Mossé attributes the effect of the potato régime to the alkalies they contain in a vitalized form. The urine loses much of its acidity and the general effect seems to be similar to that of a course of alkaline waters.

30. **Expectant Treatment During Period of Dilatation in Deformed Pelves.**—Pinard distinguishes between a primipara with a normal cervix and a multipara whose cervix is infiltrated with cicatricial tissue, in determining the proper procedure and the limits of expectant treatment. He applies the term *bassin limite* to a pelvis which has not permitted the normal accommodation of the pelvis during the pregnancy, but which may sometimes allow the passage of the fetal head.

31. **Vesicular Mole with Severe Vomiting.**—Pinatelle states that in one case the mole developed without symptoms until uncontrollable vomiting suddenly set in, requiring therapeutic abortion at the third month. In the other case there was a history of recurring metrorrhagia with cessation of fetal pulse and growth the fourth month, followed by grave vomiting. The case took a favorable turn and patient recovered. The abdomen ceased to increase in size, but débris of placenta and fragments of a mole were expelled at term. No fetus was found. Vesicular mole was accompanied by uncontrollable vomiting in 15 per cent. of the cases on record.

39. **Treatment of Surgical Tuberculosis by the High Frequency Current.**—Imbert reports three cases treated by this form of electricity with marked benefit in all, and one completely cured. The rapid and progressive improvement of the functional symptoms was most remarkable. One patient had a tubercular arthro-synovitis of the right wrist. He was a waiter, aged 34, and was able to resume work in two months. Forty seances, ten minutes each, with a current of 400 to 500 milliamperes, were given in the course of five months. The second case was a tubercular adenopathy of the neck, and the third, a tubercular diaphysitis of the right arm. The favorable results justify the application of this treatment to muscular atrophy consecutive to tubercular bone and joint lesions in general.

40. **Primary Cutaneous Actinomycosis of the Face.**—Pourpre has collected 10 cases of this form of actinomycosis in which the parasite was found. All the subjects recovered except one whose lung became involved.

41. **Cure of Leg Ulcer by Nerve Stretching and Vein Resection.**—Thévenot recommends this procedure as the operation of election for ulcers which are kept up by nerve or vein lesions, irrespective of the primal origin of the ulcer. In the case described, he stretched the external popliteal sciatic nerve, made a partial resection of the external saphena, and curetted the ulcer, resulting in the cure of an absolutely rebellious, recurring traumatic ulcer on the right leg, with neuralgic features.

42. **Resection of the Internal Pudic Nerve.**—Tavel finds but one case in which this operation was performed for vaginismus and is surprised that it has not more often been put into use. After giving the description furnished by Professor Strasser of the anatomic conditions, he reports two cases in which the operation was done for vaginismus and pruritus with success. He makes his incision midway between the tuberosity of the ischium and the anus parallel with the median line of the body, and bisected midway by the intra-ischiatic line. The incision is made to extend through the skin and the subcutaneous fatty tissue at the right, outside and behind the internal face of the ischium, to avoid injuring the inferior hemorrhoidal nerve. Following the fascia which covers the internal obturator, we will feel the pudic artery beating under the finger. It is not generally necessary to follow the nerve to the small sciatic notch, the branches which are to be resected are collected around the artery. The internal fascia of Alcock's canal once open, the nerves are isolated from the artery and accompanying veins. The motor branches are determined by slight irritation with a blunt instrument and observing the contraction. Those fibers which do not cause muscular contraction are sensory and their distribution is easily determined. Tavel advises resection simply of the labial, vestibular, or superficial perineal branches according to the extent of hyperesthesia and in some

cases it may be well to take also the clitoridian nerve. Post-operative treatment does not include drainage. In his cases recovery occurred without the least reaction.

43. **Gastrostomy.**—Terrier and Gosset describe their method of performing gastrostomy. It consists in vertical and left lateral laparotomy, dividing the fibers of the left rectus and drawing out the cone of the gastric coats, making three planes of sutures: a double plane which unites the sero-muscular coat to the posterior and anterior sheaths of the rectus and a superficial plane to unite the mucosa to the skin. The opening into the stomach is as small as possible so as to form a mucous cushion as an obturator which will plug up the opening. The muscle coats after the resection and the two parts of the rectus muscle play the part of a sphincter.

44. **Cicatricial Stenosis of the Pylorus.**—In this concluding chapter of their article Quenu and Petit describe the treatment at length. They find in reviewing the published cases that dilatation of the pylorus was performed in three cases, with one death and two failures. The operation is not satisfactory. Resection of the pylorus had four good results in four cases. Pyloroplasty gave a mortality of 21.7 per cent., five deaths in 23 operations. Gastro-enterostomy gave 5 successes in 7 operations, or a mortality of 28.8 per cent. It will appear from a superficial view of these results that pyloric resection was the operation of choice, but the cases are too few. Three of the patients operated on by pyloroplasty died of pulmonary tuberculosis, 5, 6 and 8 months after the operation. At the autopsy it was found that the pylorus was of normal diameter in these cases. The patient operated on by Bardeleben, on the other hand, remained cured for two years after the operation. Of the other cases we have little information except that three patients had some gastric trouble after the operation. One of these had a return of the vomiting and committed suicide. The autopsy showed an ulceration of the small curvature of the stomach. Of the five patients cured by gastro-enterostomy, four had been under observation for five or six months, but there has been apparent complete recovery and absence of any gastric phenomena. Hartmann's patient died of tuberculosis two years and a half after his operation, without the least stomach disorder. From the facts the authors are inclined to give the preference to gastro-enterostomy as the operation for stenosis of the pylorus following cicatricial contraction from caustics, etc., as giving less chances of relapse or ulceration. In a small number of cases gastro-enterostomy may be contraindicated, as when the stomach has been contracted to a mere channel between the esophagus and pylorus. In such a patient, Hartmann performed a duodenostomy. Such operation may be required if to the pyloric contraction is added a cardiac stenosis, but it is probable that the predominance of esophageal symptoms will lead the surgeon to first make a gastrostomy. Then, if it is impossible to feed the patient because the stomach rejects its contents, indicating a stenosis of the pylorus, gastro-enterostomy may be performed.

45. **The Clinical Use of Cytology, Cryoscopy and Hematolysis in Certain Surgical Serous Effusions.**—Juillard has investigated the utility of cytologic examinations for clinical purposes in articular and scrotal effusions and hernial sacs. He finds that a cytologic study has a certain clinical value, but we must take account of the clinical pictures, the secondary irritations and the external application of medicinal appliances. It often happens that two effusions of the same origin have a different cytologic formula according as the occurrence of their evolution and their degree of acuteness varies. The existence of a general infectious disease and local lesions may exercise an influence on the cellular contents of the effusion. The intensity of the different stages of the morbid processes appears to be characterized in order from the slighter to the more severe by the presence in the effusion of, 1, endothelial cells; 2, lymphocytes; 3, polynuclear cells. The presence of eosinophiles is of no special importance, but they are met in diseases of infectious origin. The following conditions are characterized by the cellular contents consisting exclusively or mainly of endothelial cells or by the absence of any figured elements: effusions of slow evolution; effusions of purely mechanical origin, as simple syphilitic chronic hydrocele; hydrocele symptomatic of slow syphilitic lesions of the testicle; mechanical hydrocele in case of generalized perineal edema; of tubercular arthritis of slow evolution; mechanical hydrarthroses; traumatic hemarthrosis and prerotulian hygroma, and certain effusions in the hernial sac of recent date. The following are characterized by cellular contents composed exclusively or mainly of lymphocytes: the infectious effusions, subacute or chronic; certain traumatic effusions; tubercular hydrocele; hydrocele following moderate trauma; chronic hydrohematocele; encysted hydrocele of the cord associated with general infectious disease; certain recent effusions of the hernial sac; tubercular arthritis; tubercular synovitis with riziform granules; relapsing hydrarthroses; chronic traumatic hydrarthrosis and gonorrheal hydrarthrosis without fever. Polynuclear predominence characterizes acute effusions; chronic effusions in acute exacerbations; chronic effusions affected by severe traumatism; acute gonorrheal hydrocele; hernial effusions of many days' duration; acute rheumatic arthritis; certain prepatellar hygromas; chronic effusions which have been punctured, and old tubercular arthrites. Sometimes transition forms can be observed between any of these types. Effused contents in the sac of strangulated hernia contain endothelial cells and lymphocytes in recent cases, polynuclear cells in cases of several days' duration and where the intestinal lesions are advanced. Cryoscopy does not seem to give any very useful indications for diagnosis and hematolysis. The examination of the hemolytic power of effusions of the vaginal serosa is not of practical value. In hernial sac effusions it shows the presence of lysins which seem to increase as the morbid phenomena progress. As regard intra-articular effusions there may be hemolysins where the case is clearly infectious, and especially when it is acute. In cases of traumatic hemarthrosis and of hemorrhagic prepatellar hygroma, the hematolytic power of the effused liquids is in inverse ratio to the time between the examination and the beginning of the morbid symptoms.

48. **Treatment of Whooping Cough by Formol.**—Lamallerée has a pastille of paraform evaporated over an alcohol lamp every two hours in the room, which the child is not allowed to leave. In 20 cases treated in this way, the vomiting and paroxysms ceased in twenty-four to seventy-two hours in all but 2 of the children. In the others the cure was complete in eight days, with no treatment after the first seventy-two hours.

50. **Phlebitis in the Course of the Secondary Manifestations of Syphilis.**—Oettinger points out the superficial localization and multiplicity, the absence of embolism or any serious complications and the recovery under specific treatment, as distinguishing phlebitis occurring in the secondary stage of syphilis. It is very rare in comparison to the specific arterial lesions. The first symptoms soon subside, but a long interval elapses before the vein resumes its normal elasticity. Recurrence has been observed in several cases.

54. **Recent Publications on Prophylaxis and Treatment of Puerperal Sepsis.**—Bass reviews the literary output on this subject in 1897, 1898 and 1899, a total of 397 articles and monographs. In regard to serum treatment, he observes that the indispensable requisite for successful treatment with anti-streptococcus serum is the presence of streptococci, and it should not be given until they have been found. No evil results seem to have attended its use. Only 5 cases of exanthem are mentioned in a total of 134 cases treated with the serum. Credé's colloid silver treatment has also proved harmless and the results reported encourage a trial in severe cases. Courtney and Zoy are the only writers who recommend nuclein acid. Both claim that excellent results follow its use, on account of the hyperleucocytosis which it induces. The cases treated by extirpation of the infected uterus are not conclusive as to the benefits of the procedure. When the infection has spread beyond the uterus, it is ineffectual to arrest its ravages, and when it is restricted to the organ, the patient might have recovered without the operation.

56. **Treatment of Peritonitis Due to Spontaneous Rupture of Gall Bladder Containing Stones.**—König opposes the idea that a normal gall-bladder can burst from pressure of accumulated stones. In the cases on record the walls have always been found thickened and enlarged at some points and shrunken, thin and easily torn at others, with decubitus in many instances. Cholecystectomy is the simplest and most rapid method of treatment and the results he describes in a recent case, a woman of 70, confirmed its advantages. If the rupture occurs without preceding acute and severe inflammation in the gall-bladder, the infection of the peritoneum is mild. The perforation of a decubitus lets a few non-virulent bacteria into the peritoneum, and the resulting peritonitis is at first slight and very slowly progressive. If the abdominal cavity is cleaned and the gall-bladder removed, the peritoneum will take care of the small amount of infected bile left in it. But on the other hand, when the peritonitis has progressed into a severe form, or a preceding attack of gallstone colic suggests virulent infection, the abdominal wound should be left open after the extirpation of the gall-bladder. Perforation of the gall-bladder is accompanied by symptoms indicating rupture of a viscus. The symptoms of peritonitis do not appear until later. Tenderness is most pronounced at the points where the gallstones rest on the serosa and add a mechanical factor to the irritation and induce a tendency to vomit. Diagnosis is difficult in the cases which have never exhibited any preceding symptoms of the lithiasis, as in the one he describes. An important aid in differentiating is the subsidence of the vomiting when the patient reclines quietly, while the peritonitic symptoms persist. In his and Hochenegg's case, the diagnosis was obscured by a distended loop of intestine adherent at the point where the tenderness was most marked, merely a coincidence in each case.

57. **Death Under Chloroform from Paralysis of the Heart.**—Laqueur adds another to the 12 cases of sudden death under chloroform from paralysis of the heart which Kundrat collected in 1895. Heusler witnessed a similar fatality under ether. Nordmann has collected 4 cases of the sudden death of robust young persons during a cold bath, and the sudden death of a Berlin colleague's child after a single preventive injection of antidiphtheria serum probably belongs in the same category, as also Pott's case of sudden death of a child on the introduction of the tongue spatula. All the subjects were apparently healthy children or young persons, but all had one feature in common, a very large, persisting thymus, with actual hyperplasia in some. The spleen and tonsils were also unusually large in most of the cases. Enlargement of the follicles at the base of the tongue is constant in such persons.

58. **Infection and Auto-Infection.**—Wassermann reviews the results of recent researches in regard to the protecting powers of the organism against infection. The bactericidal action of fresh normal serum is due to its two constituents, the between-body and the complement, and when one or the other is deficient, the bactericidal power diminishes. Ehrlich has recently demonstrated that after excluding the liver in animals by intoxicating them with phosphorus, certain complements vanish from the serum. He has thus established that chronic affections of internal organs are liable to deprive the organism of these important protecting substances. Metalnikof has also recently demonstrated that the complements vanish in the course of chronic suppuration. Von Dungern's observation has shown that certain cells in the organism are able to bind these complements and annul their action. He found that dead tissue possessed this property to a notable degree. These findings suggest an explanation for the readiness with which patients under similar conditions yield to infection. It has likewise been established lately that the protecting and curing substances which are elaborated in the course of certain self-limited infections are formed in the bone marrow, and that the germs causing the infection, or their products, have to reach the bone marrow before the protecting substances can be elaborated. This has been most thoroughly studied in typhoid fever. The germs which find their way into the bone marrow may linger there for years after recovery, their proliferation checked by the natural protecting powers of the serum. But if the normal circulation is interrupted by any cause, traumatic or otherwise, and the serum loses some of its protecting power, then the germs commence to proliferate and inflammatory processes are liable to develop in the marrow or periosteum. The passage of isolated germs into the blood and thus into the bone marrow, occurs more frequently than generally supposed, and is probably the essential factor in the elaboration of the protecting substances in the marrow.

60. **Renal Colic, Renal Hemorrhage and Nephritis.**—Senator does not agree with Israel in his assertions that renal colic can be caused by congestive tension or inflammation of the kidney except in rare cases. Neither is hematuria to be ascribed to this cause. Consequently, incising the kidney is not the proper method of treating renal colic or renal hemorrhage. The colic is caused by adhesions between the kidney and neighboring parts, and the resulting displacements of the organ are probably the cause of the hemorrhage. Talma pointed out some years ago that slight displacements of the kidney which cause no disturbance in healthy persons, induce nervous renal colic in persons with hypersensitive abdominal ganglia. Senator bases his statements on Israel's own cases, pointing out that in his 14 patients there was no congestion nor tension in 11, and yet the patients were cured after the intervention—incision of the kidney—in all probability from the detaching of adhesions. Even when a focus of inflammation is discovered in the kidney it is not necessarily the source of the colic and bleeding, which are the effect of other causes, except in cases of complete anuria by retention, painfully distending the organ. Israel's 14 cases include a number with pyelitis, gonorrhea, cystitis and movable kidney, suggesting the certainty of adhesions, while other writers have expressly noticed the presence of adhesions in their cases.

61. **Tetanus Germs in Gelatin.**—Levy and Bruns dissolved 2 to 3 gm. of ordinary commercial gelatin in 100 c.c. of bouillon and kept it for eight to ten days at 99 F. They then inoculated mice with .3 to .4 c.c. of the filtrate. All of the animals developed typical, fatal tetanus in two or three days. Inoculation of .2 c.c. caused a chronic tetanus of the hind leg nearest the point of the injection. Guinea-pigs also succumbed in two to four days after inoculation with 2 to 5 c.c. of the filtrate. These results were obtained constantly with four out of the six specimens of gelatin used in the tests. Further research showed that exposure to steam for eight minutes was not sufficient to sterilize the gelatin in all the tests. The results indicated that different tetanus germs have a varying susceptibility to high temperatures. The problem is still undecided as to which element in the gelatin is responsible for the hemostatic action, and whether this element would be injured by a temperature sufficiently high to actually destroy all the tetanus germs. Research in this line is needed.

62. **Clinical Utilization of Agglutination of Tubercle Bacilli.**—Rumpf has been testing the exact condition of the resisting powers of the organism in the struggle with tuberculosis, by means of the agglutinating reaction. Koch believes that the agglutinating property and the protective substances in the body parallel each other, and that the former is therefore the index of the latter. In his communication translated in THE JOURNAL of December 21, p. 1710, he states that it is possible to promote the elaboration of the protective substances by repeated injections of tubercle bacilli dust, and that the progress accomplished can be estimated by the agglutinating reaction. Rumpf found the test positive in 84 per cent. of 107 patients in various stages of tuberculosis, in 17 patients with a one-fifth dilution and in 73 with a one-tenth or still weaker dilution. He made comparative tests with Arloing's and with Koch's method of agglutinating and found the results parallel in many cases. The agglutinating reaction was marked, even without artificial stimulation, during the first period of the patients' stay in the sanatorium, showing the general benefit derived. Six patients who had been injected with old tuberculin three

times for diagnostic purposes, showed marked agglutinating power and 5 others were treated according to Koch's directions with repeated injections of the bacillus emulsion or "new tuberculin." The agglutinating property was very much enhanced in all of them and in one it reached the strength of 1 to 100, even after only three injections of comparatively small doses (.0025, .005 and .01). These were all patients in the second or third stages, in which it is more difficult to obtain the reaction. The interval is still too short to determine the permanent benefit derived from this application of Koch's method. No harm nor ill effects of any kind were noticed. The details of the agglutinating reaction in the 107 cases are tabulated.

67. **Simple Method of Preserving Specimens for Microscopic Clinical Diagnosis.**—Rohnstein states that this method has been in use at Senator's clinic for three years, and has given constant satisfaction. The specimens must be in a natural condition, neither stained nor dried. All fluid is strained out of feces, sputum or matters derived from the stomach, and the solid matters left are mixed with the preserving fluid, which is a mixture of 20 parts formol and 125 of glycerin in 200 of distilled water. If urine is to be examined, it is set aside to settle, and the fluid is siphoned off the sediment. It is then mixed with a corresponding amount of water and set aside for another twelve to twenty-four hours to settle again. This fluid is again siphoned off, and the same quantity of the preserving fluid is added. By this means all the albumin in the urine is removed in the supernatant fluid. A few crystals of thymol are added to the urine to prevent cloudiness from bacterial action. The material can be kept in this preserving fluid for years without losing its natural appearance. Specimens that have been thus preserved for three years are not altered and are ready for mieroscopic examination at any time, just as when fresh.

73. **Treatment of Nocturnal Enuresis and Pollutions.**—Porosz is convinced that both are due to defective development or deficient function of the prostate, unless a central origin is unmistakably apparent. He consequently treats them by Faradization of the prostate through the rectum and reports excellent results.

74. **Hypophrenic Pains and Neuroses of the Celiac Plexus.**—Hoffman ascribes certain subdiaphragmatic pains to a neurosis of the celiac plexus. They are characterized by their location in the upper portion of the abdomen, whence they radiate into the lower portion, but not to the genitalia nor into the legs. They also radiate backward into the sacral and gluteal regions, but not upward. When these pains are accompanied by scybalæ and polyuria, the combination forms a syndrome which justifies the assumption of a neurosis of the celiac plexus.

75. **New Test of Lungs for Forensic Cases.**—Placzek notes that the pressure in the cavity containing the lungs is zero in the fetus, while after air has once entered the lungs it is never entirely evacuated, and the manometer shows negative pressure. It is therefore possible to determine with the manometer whether an infant was born alive or not, by the amount of negative pressure in the lung cavity. The floating test and the eye will supplement the findings of the manometer and determine whether respiration was partial or complete.

79. **Dietetic Treatment of Stomach and Intestinal Affections.**—Among the points emphasized by Schmidt are the necessity that food entering a diseased intestine should be in minute particles and should make the least possible demands on its chemical digestive functions. He advises reducing the tendency of milk to putrefy by the addition of salicylic acid in the proportion of .25 to .5 gm. to the liter. This precaution has proved very effectual in his experience in treating gastric and intestinal affections. This successful attempt to disinfect the food suggests that other experiments in the same line might give fine results. An antiseptic diet seems to be particularly advisable in case of achylia, but the same result may sometimes be accomplished by administering hydrochloric acid.

80. **Statistical Study of the Consequences of Lues.**—Matthés has undertaken to record the morbidity of the syphilitics whom he has had occasion to treat since 1875. He intends to report on them every five years. He states that tabes occurred in about 1 per cent. of 698 certain cases of lues, and paralysis in 1.1 per cent. The mortality is higher than the average; most of the deaths occurred from intercurrent tuberculosis. His experience disproves the generally accepted belief that syphilis acquired late in life has an unusually severe course. About 75 per cent. of the survivors have living children, but in 35.6 per cent. births had been preceded by abortions and the death of nurslings.

83. **Study of Eclampsia Cases.**—Braitenberg states that he has had occasion to observe 46 cases of eclampsia in the last fourteen years, a proportion of 5.47 per cent. of the total number of births. Only 12 cases occurred in parturients who arrived at the clinic after labor had commenced. The others were all in persons who had been for some time in the institution, the maximum eight weeks. These cases in the clinic occurred sometimes in groups, once coinciding with an epidemic of influenza. The 6 cases in multiparæ were all extremely mild, with merely a single eclamptic attack, except in one case of carbolic poisoning. Nearly 33 per cent. of the patients had an abnormally small pelvis. Albuminuria was pronounced in all but 4 of the patients. The eclampsia developed during the pregnancy in 4, with an average of 10 attacks, and 25 per cent. mortality; during delivery in 24 per cent., with an average of 3.5 attacks and mortality of 12.5 per cent.; during the puerperium in 18, with only 2.1 attacks and no mortality. In the 18 cases in which delivery was artificially accomplished there were no further attacks in 50 per cent. In 2 of the fatal cases, marked cerebral apoplexy was found at the autopsy, so pronounced in one case that it may have been the primary affection and might have developed without the pregnancy, on the basis of old endocarditis and atheromatosis. In one case the fetus was extracted by Cesarean section immediately after death. The heart beat had not been perceptible six hours before and the fetus was in extreme rigor mortis.

86. **Brown-Sequard Injections in Treatment of Atrophy of Optic Disc.**—Castresana has been making a systematic test of this method of treating both gray and white atrophy. Vision was not restored to normal in any case, but all were much improved. One patient could count fingers at half a meter after twenty injections and at one meter after twenty more. The improvement subsided after the injections were suspended, and he proposes to resume them every two or three months in order to maintain the benefit derived.

88. **Tolerance of Strychnin.**—Alvarez prescribed spartein sulphate in a daily dose of 4 cg. for a patient with ataxia cardiaca. The druggist gave her strychnin sulphate, and the patient took 2 cg. morning and night. Instead of causing contractions, the strychnin induced an actual ataxia. The languor was so extreme that she could neither walk nor stand without support for four to six hours after each dose. The tetanizing effect was restricted to a severe and painful trismus. The symptoms subsided after suspension of the drug.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. A Practical Exposition of the Methods, Other Than Drug-giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. In Eleven Octavo Volumes. American, English, German and French Authors. Volume VI, Dietotherapy and Food in Health. By Nathan S. Davis, Jr., A.M., M.D., Professor of the Principles and Practice of Medicine in Northwestern University Medical School. Cloth. Pp. 372. Price, for the set complete, $27.50 net. P. Blakiston's Son & Co. 1901.

RECHERCHES CLINIQUES ET THERAPEUTIQUES SUR L'EPILEPSIE, L'HYSTERIE, ET L'IDIOTIE. Compte-rendu du Service des Enfants

Idiots, Epileptiques et Arriérés de Bicêtre Pendant L'Année 1900. Par Bourneville avec in collaboration de MM. Crouzon, Dionis de Séjour, Izard, Laurens, Paul-Boncour, Philippe et Oberthur. Volume XXI. Avec 19 figures dans le texte et XI planches. Paris: Progrès Médical. 1901.

THE ACCESSORY SINUSES OF THE NOSE, Their Surgical Anatomy and the Diagnosis and Treatment of Their Inflammatory Affections. By A. Logan Turner, M.D. (Edin.), F.R.C.S. Ed., Surgeon for Diseases of the Ear and Throat, Deaconess Hospital, Edinburgh. With 40 Plates and 81 Figures. Cloth. Pp. 211. Price, $4.00. New York: Longmans, Green & Co. 1902.

A POCKET CYCLOPEDIA OF MEDICINE AND SURGERY, Based upon "A Cyclopedia of Practical Medicine and Surgery." Edited by George M. Gould, A.M., M.D., Editor of American Medicine, and Walter L. Pyle, A.M., M.D., Assistant Surgeon Wills Eye Hospital, Philadelphia. Leather. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1902.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. The State Board of Health Organized 1847—Session 1897. Selma, April 20-23, 1897. Cloth. Pp. 450. Montgomery, Ala.: Brown Printing Co. 1897.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Fifteenth Session, held at Niagara Falls, June 11, 12 and 13, 1901. Volume XIV. Cloth. Pp. 369. Philadelphia: Published by the Association. 1901.

ON DISORDERS OF ASSIMILATION, DIGESTION, ETC. By Sir Lauder Brunton, M.D., D.Sc., LL.D. (Edin. and Aberd.), F.R.S., F.R.C.P. Cloth. Pp. 495. Price, $4.00. London and New York: Macmillan & Co., Ltd. 1901.

VALID OBJECTIONS TO SO-CALLED CHRISTIAN SCIENCE. By Rev. Andrew F. Underhill, Rector of St. John's Church, Yonkers, N. Y. Paper. Pp. 49. New York: Edwin S. Gorham. 1902.

ANIMAL EXPERIMENTATION. A Series of Statements Indicating Its Value to Biological and Medical Science. Paper. Pp. 177. Price, $1.00. Boston: Little, Brown & Co. 1902.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. By George Henry Fox, A.M., M.D. Part VIII. Price, $1.50 each. Philadelphia and London: J. B. Lippincott Co. 1901.

THE KEW COWL TESTS. Preface by Perry Fairfax Nursey, C.E., Past President of the Society of Engineers. Paper. Pp. 43. London: Hickson, Ward & Co. 1902.

ELEVENTH ANNUAL REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS of New Jersey, 1901. Paper. Pp. 46. Trenton, N. J.: MacCrellish & Quigley. 1902.

MENTAL GROWTH AND CONTROL. By Nathan Oppenheim, M.D. Cloth. Pp. 295. Price, $1.00. New York: The Macmillan Co. 1902.

CONTRIBUTIONS FROM THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE. (Reprints.) No. 2. Paper. Philadelphia. 1901.

REPORT OF THE KENSINGTON HOSPITAL FOR WOMEN. From Oct. 8, 1900, to Oct. 14, 1901. Paper. Pp. 29.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 20 to 26, 1902, inclusive:

Edward B. Bailey, contract surgeon, now at Demopolis, Ala., to the Division of the Philippines, via San Francisco, Cal.

E. B. Barnett, contract surgeon, leave of absence extended one month, on the expiration of which he will report to the chief surgeon, Department of Cuba, for annulment of contract.

Joseph T. Clarke, captain and asst.-surgeon, U. S. A., leave of absence for twenty days granted.

William H. Corbusier, major and surgeon, U. S. A., member of a board at Governor's Island, N. Y., for the examination of officers for promotion.

Oscar F. Davis, contract surgeon, now at Bloomington, Ind., to duty at Fort DeSoto, Fla.

Mills Dennis, contract surgeon, now at Temple, Tex., to the Division of the Philippines, via San Francisco, Cal.

Robert C. Eve, contract surgeon, former orders amended to relieve him from duty at Fort Sam Houston, Tex., and to proceed to his home at Augusta, Ga., for annulment of contract.

Edward T. Gibson, contract surgeon, from Fort Harrison, Mont., to San Francisco, Cal., for duty as transport surgeon on the transport *Meade*.

Frank D. Pease, contract surgeon, from Fort Mackenzie, Wyo., to duty at Fort Harrison, Mont.

Elias H. Porter, contract surgeon, former orders so amended as to direct him to proceed to San Francisco, Cal., from Fort Hancock, N. J., instead of from Louisa, Ky.

Milton Vaughan, captain and asst.-surgeon, Vols., leave of absence for two months granted.

Clarence A. Warwick, contract surgeon, now at Keokuk, Iowa, to the Division of the Philippines, via San Francisco, Cal.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending March 1, 1902:

Medical Inspector D. N. Bertolette, detached from the *Brooklyn* and ordered to the *New York*.

Surgeon G. T. Hibbett, detached from the Cavite Naval Station and ordered to the *Brooklyn*.

Surgeon J. E. Gardner, detached from the *New York* and ordered to the Naval Hospital, Cavite, P. I.

Asst.-Surgeon J. J. Snyder, ordered to Port Royal Naval Station for temporary duty with recruiting party.

Asst.-Surgeon B. L. Wright, when discharged from treatment at Naval Hospital, New York, ordered home and granted sick leave for three months.

Surgeon L. W. Spratling, ordered to Buffalo, N. Y., for duty at the Naval and Marine Recruiting Rendezvous.

Surgeon H. L. Law, retired, detached from duty at the Naval and Marine Recruiting Rendezvous, Buffalo, N. Y., and ordered home.

Asst.-Surgeon W. H. Ulsh, reported at the Naval Hospital, Mare Island, Cal.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Feb. 27, 1902::

Surgeon T. B. Perry, granted leave of absence for seven days from Feb. 12, 1902.

P. A. Surgeon A. R. Thomas, relieved from duty at Glasgow, Scotland, and directed to proceed to London, England, for duty in the office of the U. S. Consul-General.

Senior Pharmacist, A. M. Roehrig, granted leave of absence for six days from Feb. 5, 1902.

Junior Pharmacist Frank Siedenburg, granted leave of absence for three days from Feb. 19, 1902.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 28, 1902:

SMALLPOX—UNITED STATES.

Alabama: Birmingham, Jan 1-31, 5 cases.
Alaska: Hooniah, Jan. 29, 8 cases.
California: Sacramento, Feb. 8-15, 1 case; San Francisco, Feb. 9-16, 20 cases.
Colorado: Denver, Feb. 8-15, 5 cases.
Illinois: Feb. 15-22, Belleville, 2 cases; Chicago, 5 cases; Danville, 7 cases; Galesburg, 2 cases.
Indiana: Elkhart, Feb. 1-15, 20 cases; Evansville, Feb. 15-22, 14 cases; Indianapolis, Feb. 8-15, 8 cases.
Iowa: Clinton, Feb. 15-23, 1 case.
Kentucky: Covington, Feb. 16-23, 6 cases.
Louisiana: New Orleans, Feb. 15-22, 2 cases.
Maine: Feb. 15, Durham, 5 cases; Freeport, 1 case; Portland, 2 cases.
Maryland: Baltimore, Feb. 15-22, 3 cases.
Massachusetts: Boston, Feb. 15-22, 19 cases, 4 deaths; Cambridge, Feb. 15-22, 4 cases; Everett, Feb. 14-21, 1 case; New Bedford, Feb. 14-21, 3 cases; Newburyport, Feb. 15-22, 1 case; Quincy, Feb. 15-22, 2 cases; Waltham, Feb. 15-22, 1 case.
Michigan: Feb. 15-22, Detroit, 5 cases; Ludington, 7 cases.
Minnesota: Minneapolis, Feb. 8-22, 48 cases.
Montana: Butte, Feb. 9-16, 4 cases.
Nebraska: Omaha, Feb. 15-22, 45 cases.
New Hampshire: Nashua, Feb. 15-22, 1 case.
New Jersey: Feb. 15-22, Camden, 3 cases; Jersey City, 23 cases; Newark, 29 cases, 5 deaths.
New York: Binghamton, Feb. 15-22, 2 cases; New York, Feb. 15-22, 55 cases, 13 deaths; Yonkers, Feb. 14-21, 1 case.
Ohio: Cincinnati, Feb. 14-21, 19 cases; Hamilton, Feb. 15-22, 1 case; Middletown, Feb. 8-15, 1 case; Youngstown, Feb. 8-15, 1 case.
Pennsylvania: Allegheny, Feb. 15-22, 2 cases; Lebanon, Feb. 15-22, 1 death; Philadelphia, Feb. 15-22, 63 cases, 15 deaths; Pittsburg, Feb. 15-22, 1 case; Reading, Feb. 17-24, 1 case; Steelton, Feb. 15-22, 1 case.
South Carolina: Charleston, Feb. 15-22, 4 cases.
Tennessee: Memphis, Feb. 15-22, 6 cases.
Texas: Fort Worth, Jan. 1-31, 8 cases; Houston, Feb. 15-22, 12 cases.
Vermont: Burlington, Feb. 15-22, 17 cases.
Washington: Spokane, Feb. 8-15, 25 cases; Tacoma, Feb. 8-16, 8 cases.
Wisconsin: Green Bay, Feb. 16-23, 9 cases; Milwaukee, Feb. 16-22, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 25-Feb. 8, 12 cases.
Belgium: Antwerp, Jan. 25-Feb. 8, 16 cases, 3 deaths.
Brazil: Bahia, Jan. 10-25, 2 cases, 1 death.
Canada: Halifax, Feb. 15-22, 1 case; Victoria, Jan. 4-11, 1 case.
Colombia: Cartagena, Feb. 3-9, 2 deaths; Panama, Feb. 10-17, 50 cases, 10 deaths.
France: Nantes, Jan. 1-31, 2 cases; Paris, Feb. 1-8, 3 deaths.
Great Britain: Birmingham, Feb. 1-8, 1 case; Glasgow, Feb. 7-14, 6 cases, 1 death; Liverpool, Feb. 1-15, 26 cases; London, Feb. 1-8, 1102 cases, 82 deaths; Plymouth, Feb. 8-15, 1 case, 1 death.
India: Bombay, Jan. 14-28, 9 deaths; Karachi, Jan. 12-19, 10 cases, 3 deaths; Madras, Jan. 17-24, 2 deaths.
Italy: Naples, Feb. 1-8, 11 cases; Palermo, Jan. 25-Feb. 1, 1 death.
Malta: Feb. 1-8, 2 cases.
Russia: Moscow, Jan. 18-Feb. 1, 32 cases, 12 deaths; Odessa, Jan. 25-Feb. 8, 11 cases, 3 deaths; St. Petersburg, Jan. 25-Feb. 1, 13 cases, 4 deaths.
Straits Settlements: Singapore, Jan. 4-11, 1 case.
Uruguay: Montevideo, Jan. 4-11, 65 cases, 6 deaths.

YELLOW FEVER.

Mexico: Vera Cruz, Feb. 8-15, 2 cases, 2 deaths.

CHOLERA.

India: Bombay, Jan. 14-20, 7 deaths; Madras, Jan. 11-24, 3 deaths.
Straits Settlements: Singapore, Dec. 28-Jan. 11, 4 deaths.

PLAGUE.

India: Bombay, Jan. 14-28, 643 deaths; Karachi, Jan. 12-19, 26 cases, 25 deaths.